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In This Issue

Labor in Great Lakes shipping

Wages in building trades

Seasonal labor in Yakima Valley

Productivity in cotton textiles



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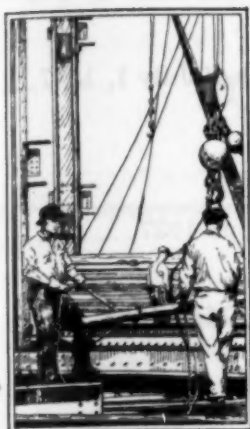
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MONTHLY LABOR REVIEW

AUGUST 1937

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HUGH S. HANNA, *Editor*

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MONTHLY LABOR REVIEW

FOR AUGUST 1937

This Issue in Brief

Working Conditions in Great Lakes Shipping.

THE shipping industry on the Great Lakes during the 7- or 8-month navigation season offers employment to several thousand persons. A survey of the wages, hours, and other working conditions on ships operated by 19 companies was made by the Bureau of Labor Statistics, covering the month of August 1935. It was found that the wages paid ranged from as high as \$606 per month for masters on the larger bulk freighters to a low of \$14.25 per month for busboys on passenger ships. In addition to these cash wages, it is customary for all members of a crew to receive meals and lodging aboard the ship as long as it is in service. The employees covered by the Bureau's survey worked a 7-day week, ranging from 56 to 84 hours. Page 269.

Wages in Building Trades.

AN AVERAGE hourly wage rate of 91.8 cents for workers in the building-construction industry in 1936 was revealed by a recent study made by the Bureau of Labor Statistics, covering 186,145 workers. Wide variations in rates were found as between occupational groups. The study also indicated that in all occupations and in all parts of the United States the rates received by union members were substantially higher than those received by nonunion workers. The differential in favor of unionists ranged from 2.5 cents in the case of plumbers in New Orleans to 81.7 cents for electricians in New York City. Page 281.

Agricultural Labor in Yakima Valley.

THE highly seasonal demands of agriculture in the Yakima Valley of Washington make necessary the utilization of thousands of transient workers. A recent study showed, however, that resident laborers received more than twice as many man-hours of employment as did transients. Although the number of workers needed at one time ranges as high as 30,000, many of the jobs last only for a few days. As this indicates, there is much unemployment for both resident and transient workers, a situation which is reflected in their annual earnings. Case records of farm workers interviewed showed that about one-fourth earned \$100 or less per year and almost half earned less than \$200 per year. Relief was necessary for many. In the case of workers with families it was found that the combined earnings of the household were only \$269 per year for relief families and \$466 for nonrelief families. Page 301.

Minimum-Wage Legislation.

TWENTY-TWO States now have minimum-wage laws. An impetus to such legislation was given this year by the United States Supreme Court, when the Court upheld the constitutionality of the minimum-wage law of Washington State. The Court in effect reversed a previous decision declaring the minimum-wage law of the District of Columbia illegal. As a result of the recent decision, several jurisdictions have revived their minimum-wage laws, considered dormant since 1923. Today, in addition to the 22 States, a

minimum-wage law is also in effect in Puerto Rico and in the District of Columbia. The principal provisions of all of the minimum-wage laws in effect in 1937 are given on page 381.

Earnings of Placer Miners.

SMALL-SCALE placer mining as a means of mitigating unemployment offers little economic security and with some exceptions falls short of providing reasonable standards of living, according to a recent joint study by the Works Progress Administration and the United States Bureau of Mines. In 1935 the average number of days worked by 28,000 miners was 45. The average daily gross income for the 45 days was \$1.60, and the average gross income for the year from the same source was \$72. About one-third of a group of relatively successful small operators were found to have had recourse to public relief between 1933 and 1936. Page 365.

Productivity in Textiles.

TECHNOLOGICAL changes taking place in the manufacture of cotton textiles between 1910 and 1936 made possible large increases in man-hour output. These possible increases varied according to type of goods produced, but were greatest in the production of terry cloth. At the same time the labor force required for the same amount of output was materially reduced. The variations in productivity and labor required for the various textiles and in the different mill departments, as revealed by a joint study undertaken by the Bureau of Labor Statistics and the National Research Project of the W. P. A., are shown on page 316.

Annual Income of Engineers.

ANNUAL earnings of professional engineers averaged \$3,412 in 1929. As shown by reports to the Bureau of Labor Statistics, 25 percent earned more than \$5,012, but only 10 percent had incomes in excess of \$7,466 per annum. On the other hand, 25 and 10 percent of the engineers earned respectively less than \$2,509 and \$1,878 per year. There were substantial reductions in these earnings over the period 1929-34. Among the several professional classes, the divergencies in earnings were most marked at the higher levels of income. Differences in educational background also affected the earning capacity. Page 412.

Salaries of Public-Health Nurses.

IN JANUARY 1937, the median monthly salary of staff nurses was \$123 in public-health nursing associations and \$135 in health departments. The medians in the public-health nursing associations ranged from \$114 in cities with a population of 50,000 to 100,000 to \$141 in cities with a population of 1,000,000 or over. Considerable variations were also reported in the median salaries of staff nurses employed by health departments in different sections of the country. Page 446.

Cooperation Among Residents of Apartment House.

A CREDIT union, a store, and a parking lot, all operated on the cooperative plan, are being carried on by the tenants in the Carl Mackley apartments in Philadelphia. The development of these cooperative activities and the other measures undertaken jointly are described on page 312.

Special Articles

LABOR CONDITIONS IN GREAT LAKES SHIPPING ¹

COMMERCE on the Great Lakes during prosperous years amounts to well over 100,000,000 short tons annually, more than 90 percent of which is made up of bulk traffic. The latter consists principally of such commodities as iron ore, coal, grain, and stone. A large proportion of the ships, therefore, are bulk freighters, which are especially constructed for these various trades but are so designed that they can readily be changed from one type of cargo to another. Such changes are necessitated by the fact that the movement of the various cargoes is largely in opposite directions, i. e. ore, grain, and stone moving eastward, while the principal movement of coal is westward.

Omitting the freight barges, the combination barge canal-lake ships, and such other craft as sand suckers, lighters, car ferries, wreckers, and tugs, there were 484 vessels of United States registry, with a combined gross tonnage of 2,376,513, available for the movement of Great Lakes commerce during the year 1935. Of this number, 401 ships or 83 percent, comprising 90 percent of the gross tonnage, were bulk freighters.

The typical bulk freighter has its power plant far aft and its quarters and bridge forward, with the cargo hold occupying the entire space between. The long clear deck is fitted with from 12 to 40 hatches to facilitate the loading and unloading of cargo. While the dimensions of these freighters have not been fully standardized, it is believed that the design giving the most efficient and economical operation is the one having an over-all length of 600 feet, a beam of 60 feet, and a depth of 32 feet, with a registered gross tonnage of between 7,400 and 8,200. A few of these ships are motor-driven, but most of them are equipped with coal-burning, reciprocating steam engines.

In addition to these bulk freighters, there are a few passenger and packet-freight vessels, carrying chiefly such commodities as automobiles, flour, cement and lime, iron and steel products, sugar, salt, pig iron, fruits and vegetables, fish, and copper.

¹ Prepared by Orrin R. Mann, of the Bureau's Division of Wages, Hours, and Working Conditions.

Scope of Survey

The present article is confined to the operation of vessels in the passenger, packet-freight, and bulk-freight trades. Furthermore, it is limited to boats of 1,000 gross tons and over. The information collected covers a pay-roll period during the month of August 1935, and is based on a representative sample of 19 companies, which operated 65 ships with a total of 2,993 vessel employees.² Of these 19 companies 3 operated 5 passenger boats with 913 vessel employees, 3 operated 7 packet-freight boats with 197 vessel employees, and 13 operated 53 bulk freighters with 1,883 vessel employees. The companies carried on operations out of various Great Lakes ports between Buffalo and Duluth. The passenger ships ranged in size from 1,955 to 7,739 gross tons, the packet-freight boats from 2,592 to 4,698 gross tons, and the bulk freighters from 2,029 to 8,877 gross tons.

Personnel

The ships on the Great Lakes require a varied crew, depending upon the type of service in which they are being employed.

An average bulk freighter of about 7,000 gross tons and operating on a 3-crew basis has the following personnel:

Deck department: Master, first mate, second mate, third mate, radio operator (on some ships), three wheelmen, three watchmen, three on deck watch, and three deckhands.

Engine department: Chief engineer, first assistant engineer, second assistant engineer, third assistant engineer, three oilers and wipers, six firemen, and three coal passers.

Stewards' department: Chief or first cook, second cook, and two porters.

A similar crew is found on packet-freight boats.

Passenger ships, on the other hand, with a similar number of officers in the deck and engine departments, carry a much larger unlicensed personnel in these two departments than do bulk freighters. The principal difference between the two types of vessels, however, is in the stewards' department. The total stewards' personnel on the passenger ships included in the survey varied with the passenger capacity and ranged in number from 38 to 145. These consisted in varying numbers of chief stewards, pursers, first cooks, other cooks, dishwashers and scullions, salon stewards and waiters, cabin stewards, cabin boys, stewardesses and maids, bell boys, patrolmen, porters, messmen, messboys, bus boys, and miscellaneous clerical and other employees assisting the chief steward and purser.

Of the 2,993 employees included in the survey, 108 (3.6 percent) were females, all of whom were employed in the stewards' department.

² This may be compared with an estimated total of 10,881 vessel employees (including 314 masters) on ships of 1,000 gross tons and over in 1934. See Federal Coordinator of Transportation, Hours, Wages, and Working Conditions in Domestic Water Transportation (Washington, September 1936), Vol. II, p. 30.

Twenty of these were on bulk freighters, where it is not unusual for the first cook to take his wife aboard as second cook. The number of Negroes was 209, or 7.0 percent of the total; all of these were also employed in the stewards' department.

Employment Policies

In 12 out of the 18 firms (1 company did not report on its employment policy), a designated official was responsible for the hiring of all licensed personnel. In 6 of these 12 companies, the same official also hired the steward or chief cook, while in the other 6 the latter was hired by the master. In the remaining companies, an official was responsible for the hiring of the master and chief engineer, who in turn selected their own licensed assistants.

The usual procedure as to the unlicensed personnel was for the master to hire the deck employees, the chief engineer to hire the engine force, and the steward or chief cook to hire his helpers. In three firms, however, the first mate and the first assistant engineer hired, respectively, the deck and engine forces.

The majority of the operators of bulk freighters on the Great Lakes are members of an employers' organization known as the "Lake Carriers' Association." The welfare plan committee of this association operates assembly halls in Buffalo, Conneaut, Ashtabula, Cleveland, Lorain, Toledo, Detroit, South Chicago, Duluth, Erie, and Gary. Men desirous of employment below the grade of officer on lake vessels enroll at the assembly hall most convenient to them and are assigned when needed. The assembly halls are fitted out as club rooms, with a library and various forms of amusement, and the men usually congregate there daily, particularly during the early part of the navigation season, so as to be available for call. Those operators who are not members of the association usually recruit their unlicensed personnel by direct application at dock offices. A ship ordinarily keeps the same crew during the entire navigation season, and the employees may be paid at the end of a trip, semimonthly, or monthly, depending upon the policy of the particular company.

None of the firms reported having a maximum age limit for employment, and two of the companies did not even have a minimum limitation. The minimum hiring ages reported were as follows: Six companies, 18 years; one company, 20 years; and seven companies, 21 years; three companies did not specify the minimum age. As to citizenship, 14 firms stated that they preferred their employees to be full American citizens, and 2 insisted that the employees at least have their first papers. Only one company showed a preference for married men in hiring.

Six companies required their personnel to undergo a physical examination when hired, two of this number requiring an additional physical examination before promotion. None of the companies had

any set rules pertaining to educational requirements, but four gave preference to high-school graduates in hiring both licensed and unlicensed personnel. Only 4 of the 19 companies recognized the various maritime unions in hiring. All of the reporting firms gave preference to former employees.

Insofar as possible, the various companies attempted to make their promotions from the ranks, seniority being considered after ability both in promotions and in laying off of employees.

The firing and laying-off of employees was usually done by the same person responsible for hiring them originally. In case of lay-off due to illness or injury away from the home port, the worker receives free hospitalization from the United States Public Health Service Marine Hospitals. However, the companies reported that in such cases the employee would receive payment in full to time of leaving the ship. Moreover, when ready to return to work, if he was unable to secure a job at the port of hospitalization, the company would return him to the home port at its expense. As to the worker discharged with prejudice, the general practice was to bring him back to the home port and pay him in full to date of discharge.

Basic Monthly Wage Rates

The employees, both licensed and unlicensed, were paid either a basic monthly rate or daily rate. For purposes of comparison, however, the daily rates have been converted to a monthly figure.

The extent of variation in the monthly base rates actually paid to the various employees is shown in table 1. Owing to the wide divergence in pay, separate distributions have been compiled for the licensed and unlicensed personnel, although there is considerable overlapping between the two distributions.

Among the 536 licensed employees, the range in monthly rates was very wide, namely from \$75 to \$606. Moreover, within this spread there was no major concentration, but instead there appeared a number of well-distributed minor concentrations. It will be seen that slightly less than 10 percent of the licensed employees were paid under \$120, and somewhat less than 25 percent received under \$140. On the other hand, exactly 55 percent earned \$200 and over, 21.8 percent received \$300 and over, and 7.3 percent earned \$500 and over.

The distribution covering the 2,457 unlicensed workers showed a much narrower range, namely from \$14.25 to \$194.50. Several well-defined groups appear within this spread, with 77.6 percent of all employees earning \$60 and under \$110. There were 18.5 percent receiving less than \$60, all of these workers being in the stewards' department on passenger ships. Only 3.9 percent, on the other hand, earned \$110 and over.

TABLE 1.—Distribution of Employees in Great Lakes Shipping,
by Basic Monthly Rates, 1935

Monthly rate	Number of employees	Simple percentage	Cumulative percentage	Monthly rate	Number of employees	Simple percentage	Cumulative percentage
Licensed personnel: ¹				Unlicensed personnel:			
Under \$80.....	1	0.2	0.2	Under \$30.....	36	1.5	1.5
\$80 and under \$100.....	23	4.3	4.5	\$30 and under \$40.....	319	12.9	14.4
\$100 and under \$120.....	29	5.4	9.9	\$40 and under \$50.....	54	2.2	16.6
\$120 and under \$140.....	78	14.5	24.4	\$50 and under \$60.....	46	1.9	18.5
\$140 and under \$160.....	15	2.8	27.2	\$60 and under \$70.....	185	7.5	26.0
\$160 and under \$180.....	27	5.1	32.3	\$70 and under \$80.....	468	19.1	45.1
\$180 and under \$200.....	68	12.7	45.0	\$80 and under \$90.....	200	8.1	53.2
\$200 and under \$220.....	52	9.7	54.7	\$90 and under \$100.....	829	33.8	87.0
\$220 and under \$240.....	26	4.8	59.5	\$100 and under \$110.....	224	9.1	96.1
\$240 and under \$260.....	50	9.3	68.8	\$110 and under \$120.....	16	.6	96.7
\$260 and under \$280.....	19	3.6	72.4	\$120 and under \$140.....	10	.5	97.2
\$280 and under \$300.....	31	5.8	78.2	\$140 and under \$160.....	61	2.4	99.6
\$300 and under \$340.....	3	.5	78.7	\$160 and over.....	9	.4	100.0
\$340 and under \$380.....	14	2.6	81.3				
\$380 and under \$420.....	15	2.8	84.1	Total.....	2,457	100.0	-----
\$420 and under \$460.....	35	6.6	90.7				
\$460 and under \$500.....	11	2.0	92.7				
\$500 and under \$540.....	10	1.9	94.6				
\$540 and under \$580.....	-----	-----	94.6				
\$580 and under \$620.....	29	5.4	100.0				
Total.....	536	100.0	-----				

¹ Including radio operators, chief and second stewards, and pursers.

Numerous factors, of course, are responsible for the variation in the monthly rates shown above. The occupational factor—the relative training and responsibility involved in the various jobs—is the most important, but size of ship and type of service are also of importance.

All of the bulk freighters and nearly all of the packet freighters covered here were operated by companies belonging to the Lake Carriers' Association. Early in 1934, this association recommended to its members a scale of minimum rates of pay, which was still in effect in August 1935. As regards the licensed deck and engine personnel, the rates varied as to size of boat, which was measured in length and gross tonnage. These rates were as follows:

TABLE 2.—Lake Carriers' Association's Minimum Monthly Scale
for Licensed Personnel

Occupation	Size of ship ¹			
	Classes A and B	Class C	Class D	Class E
Masters.....	\$606.00	\$519.00	\$462.00	\$348.00
Mates, first.....	291.00	258.00	228.00	150.00
Mates, second.....	216.00	195.00	180.00	126.00
Mates, third.....	135.00	117.00	-----	-----
Engineers, chief.....	420.00	384.00	354.00	216.00
Engineers, first assistant.....	258.00	231.00	201.00	150.00
Engineers, second assistant.....	195.00	174.00	162.00	-----
Engineers, third assistant.....	127.50	111.00	-----	-----

¹ The gross tonnage and length of the various classes of vessels are as follows:

	Gross tonnage	Length of vessel (feet)
Class A.....	Over 7,000	600 and over
Class B.....	6,000 to 7,000	500 to 600
Class C.....	4,500 to 6,000	400 to 500
Class D.....	3,500 to 4,500	350 to 400
Class E.....	2,000 to 3,000	225 to 300

The minimum monthly rates recommended for unlicensed employees on steamers were—

Wheelmen.....	\$99. 00	Coal passers.....	\$67. 50
Watchmen.....	96. 00	Chief cooks (over 4,000 tons) ..	151. 50
Deck watches (able seamen)....	85. 50	Chief cooks (under 4,000 tons) ..	135. 00
Deckhands (ordinary seamen) ..	72. 00	Second cooks.....	87. 00
Deck engineers.....	105. 00	Porters.....	72. 00
Firemen and oilers.....	96. 00		

The averages based on actual monthly rates paid to the various employees by occupation and type of service are presented in table 3.

TABLE 3.—Basic Monthly Rates in Great Lakes Shipping, by Department, Occupation, and Type of Service, 1935

Department and occupation	Bulk freighters				Packet freighters			Passenger ships				
	Number of employees	Monthly rate (dollars)			Number of employees	Monthly rate (dollars)		Number of employees	Monthly rate (dollars)			
		Average	Minimum	Maximum		Average	Minimum		Maximum	Average	Minimum	Maximum
<i>Deck department</i>												
Licensed:												
Masters.....	50	555. 65	348. 00	606. 00	7	435. 43	320. 00	489. 00	6	313. 81	240. 63	480. 00
Mates, first.....	53	275. 03	150. 00	291. 00	7	215. 14	192. 50	258. 00	6	229. 36	213. 00	270. 00
Mates, second.....	53	206. 37	126. 00	216. 00	7	166. 43	150. 00	195. 00	5	206. 49	188. 00	250. 00
Mates, third.....	48	131. 67	117. 00	150. 00					2	(1)		
Radio operators, first and second.....	23	92. 54	82. 50	115. 00					8	98. 13	75. 00	110. 00
Unlicensed:												
Quartermasters and wheelmen.....	168	99. 02	99. 00	100. 00	17	97. 76	96. 00	100. 00	16	100. 00	100. 00	100. 00
Seamen, A. B.....	123	86. 13	85. 50	96. 00	12	92. 25	85. 50	99. 00	38	100. 00	100. 00	100. 00
Seamen, ordinary.....	183	72. 08	72. 00	75. 00	22	72. 07	72. 00	72. 50	43	72. 50	72. 50	72. 00
Watchmen.....	155	96. 03	96. 00	97. 50	8	96. 00	96. 00	96. 00	19	100. 00	100. 00	100. 00
Miscellaneous employees.....	13	108. 81	99. 00	127. 50					5	126. 25	76. 25	160. 00
<i>Engine department</i>												
Licensed:												
Engineers:												
Chief.....	51	398. 46	354. 00	420. 00	7	339. 52	263. 64	369. 00	5	253. 98	225. 00	275. 00
First assistant.....	53	247. 85	150. 00	272. 50	7	206. 71	192. 50	231. 00	5	219. 48	206. 00	231. 00
Second assistant.....	57	187. 26	133. 50	201. 50	8	161. 50	150. 00	174. 00	5	190. 20	170. 00	198. 00
Third assistant.....	48	125. 36	111. 00	150. 00					2	(1)		
Unlicensed:												
Water tenders.....									21	100. 00	100. 00	100. 00
Firemen.....	262	96. 00	96. 00	96. 00	27	95. 78	91. 50	100. 00	76	100. 00	100. 00	100. 00
Oilers.....	158	96. 03	96. 00	97. 50	22	95. 05	91. 50	100. 00	24	100. 00	100. 00	100. 00
Coal passers.....	156	67. 50	67. 50	67. 50	25	69. 90	67. 50	72. 00	34	73. 29	72. 50	77. 00
Miscellaneous employees.....	4	(1)							15	122. 50	100. 00	149. 75
<i>Stewards' department</i>												
Stewards, chief and second.....	1	(1)							7	159. 71	110. 00	203. 50
Pursers.....									5	175. 03	121. 00	300. 00
Chefs and chief cooks.....	52	150. 79	135. 00	161. 50	7	145. 43	135. 00	151. 50	5	165. 62	150. 00	194. 50
Cooks, first.....	2	(1)							4	94. 38	74. 75	120. 00
Other cooks.....	54	87. 03	87. 00	88. 50	7	87. 00	87. 00	87. 00	30	89. 54	65. 00	110. 00
Dishwashers and scullions.....									71	40. 17	39. 00	50. 00
Stewards, salon, and waiters.....									116	42. 62	39. 00	95. 25
Stewards, cabin.....									29	38. 17	35. 00	39. 00
Stewardesses and maids.....									59	41. 53	39. 00	85. 80
Bell boys.....									36	19. 80	15. 00	35. 00
Watchmen, patrol.....									20	70. 36	55. 00	100. 00
Porters.....	116	72. 10	72. 00	75. 00	7	72. 00	72. 00	72. 00	30	41. 84	39. 00	67. 50
Messmen, messboys, and bus boys.....									47	40. 51	14. 25	50. 00
Miscellaneous clerical employees.....									42	56. 39	35. 00	115. 00
Miscellaneous employees.....									77	55. 92	39. 00	157. 00

¹ Not sufficient data to compute an average.

Comparison of the actual pay rolls submitted by the various operators of freight ships with the schedule of rates recommended by the Lake Carriers' Association reveals that in nearly all instances the employees were paid the minimum rates. As regards unlicensed workers, this is also substantiated by the fact that the averages in the various occupations were practically the same as the minimum figures. Moreover, in the case of licensed officers it was found that only on ships falling entirely within a certain class, i. e., both as to gross tonnage and length, were employees granted the scale for that class.

One outstanding fact is the relatively high average monthly rate of masters on bulk and packet freighters. As shown in table 3, their rate was more than twice as large as that for first mates, who ranked next in the deck department. Moreover, the average for masters exceeded by about one-third that of chief engineers, highest in rank in the engine department. Substantial and more or less equal differentials were found between the averages of successive grades of officers in both deck and engine departments, but it will be seen that for the same rank the average in the deck department exceeded somewhat in each case that in the engine department.

Among the unlicensed personnel in these departments, outside of miscellaneous employees, the highest average (nearly \$100) was for quartermasters and wheelmen, followed closely by watchmen and firemen and oilers. Next in line was the average of able seamen, followed by that for ordinary seamen, with coal passers earning the lowest average (\$67.50 on bulk and \$69.90 on packet freighters).

With respect to the three principal occupations in the stewards' department on freight vessels, the average of chefs and first cooks fell about midway between those of second and third officers, while the averages of "other cooks" and porters approximated those of able and ordinary seamen respectively.

On the passenger ships,³ none of which was operated by companies with membership in the Lake Carriers' Association, the wage rates of licensed officers were quite similar to those found in the freight service. The average for masters, however, was not so outstanding, and the differentials between successive ranks in each department were much smaller. It should also be noted here that, while the averages of masters and chief engineers were lower, those of second mates and second assistant engineers were higher in the passenger than in the freight service. In the case of first mates and first assistant engineers, however, the passenger averages were lower than those on bulk freighters and higher than those on packet freighters.

Among the unlicensed employees in the deck and engine departments of the passenger service, the ordinary seamen and coal passers

³ These ships were operated by companies that recognized the various unions.

averaged about \$72.50; all of the other occupations, except a few miscellaneous employees, averaged \$100 per month. Thus, while ordinary seamen earned more or less the same in all services, most of the remaining occupations had somewhat higher averages in the passenger as compared with the freight service.

In the stewards' department of the passenger service, the highest-paid occupations were those of chief and second steward, purser, and chef and chief cook, whose averages ranged approximately from \$160 to \$175. Most of the cooks averaged around \$90 while the average of patrol watchmen was approximately \$70. However, most of the occupations in this department, including dishwashers and scullions, salon stewards and waiters, cabin stewards, stewardesses and maids, porters, and messmen and bus boys averaged approximately \$40. The lowest paid of occupations was that of bell boys, who averaged \$19.80 per month.

Bonuses, Tips, Commissions, etc.

Two bulk-freight operators reported that, while it was not guaranteed, it was customary to grant to each employee in service during the entire shipping season a bonus of 10 percent of their total earnings for the season. However, this bonus did not apply to the master and chief engineer. A third company stated that a Christmas present of \$100 was given to each master and chief engineer, if finances permitted. The remaining companies had no bonus systems.

Various members of the stewards' department on passenger ships receive tips, but the company officials would not attempt to estimate the extent of such additional income. Some of the passenger-ship operators paid the attendants of stands selling cigars, popcorn, etc., a commission based upon the amount of sales, in addition to the monthly salary. However, these commission earnings were not reported.

Subsistence and Lodging

In addition to the monthly pay, the entire personnel receive their meals and lodging throughout the navigation season. Accurate figures were not available as to the actual value of these perquisites, but some of the company officials reported estimated figures. Five firms estimated the meals as ranging from 75 cents to \$1 per day per man, these figures being based upon the wholesale cost of the unprepared food. Eleven firms reported the combined value of meals and quarters as ranging from \$1.40 to \$2.00 per day per man; these figures, too, were based upon the cost of unprepared food. No money allowance in lieu of subsistence in port was reported by any of the companies, as the men were free to eat and sleep aboard ship as long as it was in service.

Hours of Work

Late in 1934, in order to increase the employment opportunities, the Lake Carriers' Association voluntarily adopted the 3-crew plan for the majority of its ships, or bulk freighters. This system provided for 4 hours on duty and 8 hours off duty for the individual, or a total of 8 hours' work in each 24-hour period. It applied to all class A, B, and C ships, whose operators were members of the association. Class D ships carried a sufficiently large crew to allow 8 hours' work for the unlicensed personnel, but the licensed officers were required to be on duty 12 hours (6 hours on and 6 hours off); while class E ships remained on the 12-hour day for both licensed and unlicensed personnel.

The hours per day worked on the 65 ships included in the Bureau's study were as follows: On 48 boats, all employees were on an 8-hour basis; on 8 ships, the stewards' department was on a 12-hour basis, with all other employees working 8 hours; and, on the 9 remaining boats, the licensed officers and members of the stewards' department worked 12 hours, and all other employees worked 8 hours. As shipping is a 7-day per week industry, the weekly hours ranged from 56 to 84.

Overtime.—Overtime work, or that in excess of the regular daily hours, was apparently the exception in Great Lakes shipping. During the pay-roll period covered, there was no overtime work shown on any of the pay rolls examined by the Bureau. However, the various companies reported their policies pertaining to overtime work performed by the unlicensed personnel.

Seven companies stated that overtime work was required only in case of emergency, and that in such cases the employee received no additional compensation. Five other companies reported additional work only in case of emergency, but they paid the employees the regular rates for the extra hours worked. Another company paid deckhands 50 cents an hour for all work after 9 hours per day in port. Seven additional companies permitted their unlicensed personnel to volunteer for work in loading and unloading the vessel in port, for which extra payment was made as follows: Three operators paid 50 cents an hour, one paid 35 cents, one paid 30 cents, one paid the prevailing scale at the particular port (but had a minimum of 60 cents per hour), and one gave compensatory time off for any extra work.

Holiday Observance and Vacations

As a rule, only such work as is necessary for the safety of the ship and cargo is performed on freight vessels on Sundays and holidays either in port or at sea. Two of the freight operators made a special effort to have their ships in port on such holidays as Memorial Day,

Independence Day, and Labor Day, giving their crews shore leave on these days. Passenger ships, on the other hand, usually have their heaviest traffic on Sundays and holidays, oftentimes operating short excursion trips in addition to their regularly scheduled runs.

Due to weather conditions, the Great Lakes are closed to navigation during the winter months, the open season usually being from late in April until early in November, although during 1935 freight traffic was passing through the St. Marys River and the American and Canadian connecting canals as late as December 16. Since the ships are laid up and the crews dismissed during the winter months, the companies do not have any policy as to vacations for either the licensed or unlicensed personnel. In the majority of instances, all employees except the masters and chief engineers are taken off the pay rolls during the closed season. A number of companies, however, pay the masters and chief engineers on an annual basis, but divide the total earnings into ten equal payments. These employees are then responsible for the laying-up of the ships after the end of the season and the fitting-out before the beginning of the following season.

Requirements as to Uniforms

The wearing of special uniforms is not of much importance on the Great Lakes, where the greater part of the traffic is in freight. The usual outer clothing of the crew members on a freight boat consists of a blue shirt and dungarees. One freight operator, however, required the licensed officers to wear blue officers' uniforms, furnished by the company at an estimated cost of \$37.50 per man per year. This company also bore the maintenance cost, which amounted to approximately \$2 per man per month.

On passenger boats, it is necessary that the personnel make a more presentable appearance. The licensed officers, radio operators, stewards and their assistants, pursers, patrolmen, bell boys, and some miscellaneous petty deck officers are required to wear either white duck, or white flannel trousers and blue coats, or two-piece blue serge uniforms, depending upon the season and the ship. The cost of these uniforms was estimated to be from \$15 to \$65 per year per man, which is borne by the employee.

Sailors, oilers, and water tenders usually wear blue dungarees and jumpers; deckhands wear white sailors' uniforms; waiters wear white coats; and maids, cashiers, and kitchen girls wear white Hoover uniforms. The estimated cost of these items per year per person ranged from \$1.50 for the white coats to from \$10 to \$12 for the Hoover uniforms, this cost being borne in each instance by the company.

Welfare Work

While the passenger and packet-freight operators conducted some welfare work for the benefit of their employees, there is very little information available as to the details. The most complete description of welfare work is that of the Lake Carriers' Association in its annual report for 1935.

In addition to the combination assembly hall-club rooms, which are operated by the welfare plan committee, the association also conducted classes in navigation and engineering at Cleveland and Marine City during the winter months. These classes were open to crew members and officers of the ships operated by the members of the association and prepared the students for the taking of the United States Department of Commerce examination either for an original license or for a rise in grade. Practically all promotions were made among those who prepared themselves through these classes.

The association also operated a savings plan for the benefit of the crew members. An individual desiring to save part of his wages notified the master of the amount to be saved while remaining aboard ship. The master in turn notified the company, and the amount was deducted from the pay envelope and deposited to the credit of the individual in one of three banks selected for this purpose by the association. The total deposits, representing savings by crew members on 173 vessels, amounted to \$910,305.30 during the calendar year 1935.

Ship safety committees, consisting of six members of a crew, divided equally between the deck and engine forces, have been of great benefit in reducing the number of personal injuries, particularly fatal injuries, during recent years.

The crew members, through the association, voluntarily contribute funds toward the support of the Sault Ste. Marie Dispatch Office of the American Merchant Marine Library Association and in turn receive book service. This service usually consists of a carton of 30 books sent at one time to the ship for circulation among the crew members.

A death benefit was voluntarily created by the association in 1909. It has for its purpose the providing of quick relief to beneficiaries of seamen who sustain fatal injury or total disablement while in the performance of duty. Since the organization of this plan the association has paid out a total of \$83,516.40 to cover 656 death benefits or total disablements and to provide burial for indigent seamen. This death benefit is paid for by the member companies and applies to all members of the crew in varying amounts, increasing with the length of service up to a fixed maximum. The benefit for the unlicensed personnel is usually enough to provide for burial expenses, while that for licensed officers varies from a maximum of \$1,000 for mates and

assistant engineers to \$1,500 for the chief engineer and \$2,000 for the master. Officers may, however, secure additional insurance at their own expense, regardless of physical condition or age, at a very low cost.

First aid and treatment for minor illnesses is rendered by the ship's officers, but if the injury or illness is serious the man is put ashore at the first port of call and transferred to the nearest marine hospital of the United States Public Health Service for free treatment.

WAGE RATES AND HOURS OF LABOR IN THE BUILDING TRADES¹

By EDWARD P. SANFORD, *of the Bureau of Labor Statistics*

DURING recent years, the urgent need for accurate information concerning wage rates actually paid in the construction industry has become increasingly apparent. At present, 30 States and the Federal Government have laws which, in general, call for the payment of prevailing wage rates on public works. Obviously these laws call for information as to what constitutes prevailing wage rates.

Recent legislation has made the question particularly pressing in the building trades. The original Bacon-Davis Act, for example, provided for the payment of prevailing rates of wages on contracts in excess of \$5,000, involving construction and repair of buildings owned by the United States. In August 1935 this law was extended to cover all contracts involving the construction of public works, including contracts for painting and decorating. This new act was made applicable to all contracts in excess of \$2,000. Under the act of 1935 the Secretary of Labor is made responsible for determining the prevailing rate of wages to be paid to each class of mechanics and laborers.²

Since 1907 the Bureau of Labor Statistics has collected data concerning scales of wages and hours provided by union agreements in the building trades. It does not follow, however, that these rates are the actual wages paid. The union agreements usually fix minimum wages and maximum hours, which are frequently quite different from the actual wages paid and hours of labor worked in the industry. To fill this gap, the Bureau of Labor Statistics, in cooperation with the Works Progress Administration, undertook an extensive survey of the wage rates and hours of labor that actually prevailed in the building industry in the fall of 1936.

Scope of Survey

Building construction includes only part of the broad field embraced by the construction industry. The construction industry as a whole includes not only building construction, but heavy engineering, the construction of water and sewer systems and of streets and roads, river and harbor improvements, etc. Measured by the number of

¹ Prepared under the direction of Herman B. Byer, Chief of Division of Construction and Public Employment.

² Other Federal statutes providing for payment of prevailing wage rates are the United States Emer-

gency Relief and Construction Act of 1932 (H. R. 9642), title III, sec. 301; the Emergency Relief Appropriation Act of 1935, sec. 107; and the Emergency Relief Appropriation Act of 1936 (H. R. 12624), title II.

persons employed, the construction industry in 1930 occupied eighth place among the major industries of the country. In that year, 2,600,000 persons, or more than 5 percent of gainfully employed workers, were engaged in the industry. It is estimated ³ that of the total, approximately a fourth were employed in building construction.

In order to obtain a representative cross section of wages and hours of labor in the building industry, information was obtained from contractors located in 105 cities in 48 States and the District of Columbia,⁴ classified by population as follows:

Population:	Number of cities
1,000,000 or more.....	5
500,000 to 1,000,000.....	9
250,000 to 500,000.....	18
100,000 to 250,000.....	31
50,000 to 100,000.....	23
25,000 to 50,000.....	14
10,000 to 25,000.....	5
Total.....	105

On the basis of the census of 1930, the population of the cities included constituted 27.5 percent of the total population of the United States. Data were also collected from 30 towns, villages, and rural communities with a population of less than 10,000, but are not included in the present summary; this information will be given in a more detailed study to be published later.

Agents of the Bureau of Labor Statistics were sent to each of the cities with instructions to schedule a representative pay roll of building contractors and subcontractors, nearest to the date of their visit. The pay-roll periods scheduled were chiefly for the months of September, October, and November, 1936.

Since the object of the survey was to secure an all-round picture of prevailing wage rates in the principal occupations in the building

³ The Construction Industry, Market Research Series 10.1, Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce, April 1936.

⁴ The cities covered were: Akron, Ohio; Albany, N. Y.; Albuquerque, N. Mex.; Altoona, Pa.; Asheville, N. C.; Atlanta, Ga.; Baltimore, Md.; Birmingham, N. Y.; Birmingham, Ala.; Bloomington, Ill.; Boise, Idaho; Boston, Mass.; Brockton, Mass.; Buffalo, N. Y.; Burlington, Vt.; Butte, Mont.; Camden, N. J.; Casper, Wyo.; Charleston, S. C.; Charleston, W. Va.; Chattanooga, Tenn.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Columbus, Ohio; Dallas, Tex.; Decatur, Ill.; Denver, Colo.; Des Moines, Iowa; Detroit, Mich.; Duluth, Minn.; Eau Claire, Wis.; El Paso, Tex.; Elizabeth, N. J.; Erie, Pa.; Eugene, Oreg.; Evansville, Ind.; Fargo, N. Dak.; Flint, Mich.; Fort Smith, Ark.; Fresno, Calif.; Gary, Ind.; Grand Rapids, Mich.; Green Bay, Wis.; Greensboro, N. C.; Hartford, Conn.; Houston, Tex.; Indianapolis, Ind.; Jackson, Miss.;

Kansas City, Mo.; Knoxville, Tenn.; Lansing, Mich.; Lincoln, Nebr.; Little Rock, Ark.; Los Angeles, Calif.; Louisville, Ky.; Memphis, Tenn.; Miami, Fla.; Milwaukee, Wis.; Minneapolis, Minn.; Montgomery, Ala.; Nashua, N. H.; Nashville, Tenn.; New Orleans, La.; New York, N. Y.; Norfolk, Va.; Oklahoma City, Okla.; Omaha, Nebr.; Peoria, Ill.; Philadelphia, Pa.; Phoenix, Ariz.; Pittsburgh, Pa.; Pittsfield, Mass.; Portland, Maine; Portland, Oreg.; Providence, R. I.; Reading, Pa.; Reno, Nev.; Richmond, Va.; Rochester, N. Y.; Rockford, Ill.; St. Louis, Mo.; St. Petersburg, Fla.; Sacramento, Calif.; Salt Lake City, Utah; San Antonio, Tex.; San Francisco, Calif.; Savannah, Ga.; Schenectady, N. Y.; Seattle, Wash.; Shreveport, La.; Sioux City, Iowa; Sioux Falls, S. Dak.; Syracuse, N. Y.; Tacoma, Wash.; Topeka, Kans.; Trenton, N. J.; Tulsa, Okla.; Washington, D. C.; Waterbury, Conn.; Wheeling, W. Va.; Wichita, Kans.; Wilmington, Del.; Worcester, Mass.; Zanesville, Ohio.

trades (excluding apprentices and foremen), care was exercised to secure an adequate sample in each city. Among other factors considered in building up the sample were type of construction (whether residential or nonresidential), type of financing (whether public or private), organization status of the workers (whether union or non-union), size of firms, and class of work performed.

A final factor considered in the survey was the volume of building activity in each city. For this purpose, the value of building permits issued during the first half of 1936 served as a basis. In the aggregate, the value of all building permits issued in the 105 cities in the first 6 months of 1936 was \$395,375,519. The actual or estimated value of all projects covered by this survey was \$338,829,331.⁵

In all, the records of over 6,000 contractors were examined and scheduled, but only 5,450, covering 13,267 projects, were used in compiling the report. From these pay rolls the wages paid to and the hours worked by 186,145 employees were recorded. It is impossible to state definitely what percentage this number is of all employees working in the building trades at the time of the survey, but it probably represents between 25 and 30 percent of the total.

Information was also collected concerning the regular full-time hours worked from Monday to Friday, on Saturday and weekly, and overtime rates of pay on weekdays and Sundays.

The fact should not be overlooked that the employees studied were largely engaged in urban building construction, although agents were instructed to schedule pay rolls of projects in any territory generally considered to be adjacent to the city visited. Thus, in Boston, projects were scheduled outside of Metropolitan Boston, in some of the 35 or 40 municipalities that constitute what is referred to as Greater Boston. In Chicago, projects located in Elgin and other points within a radius of 25 or 30 miles were covered. In Los Angeles, any project in Los Angeles County was considered pertinent to this survey. In all cases the projects were those of contractors with home offices within the city limits of the selected cities.

Average Hourly Wage Rates

For the building-construction industry as a whole, or, more precisely, for the 186,145 workers covered in the present survey, the

⁵ Most of the contractors opened their books to the Bureau's agents and permitted the agent to use the actual value of contracts on which they were working. On about 1 percent of the projects studied, the contractor estimated the value of his share of the project. For about 2 percent of the projects it was impossible to estimate the value. These projects

were operative builders' contracts, where pay rolls covered employees who worked progressively on a number of residential contracts, and could not be "tied in" to any one building or project. For these reasons, the figure given above, \$338,829,331, is slightly less than the actual value of all projects studied.

average hourly rate paid in 1936 was 91.8 cents. Of the 186,145 employees scheduled, 126,014, or 67.7 percent, were union and 60,131, or 32.3 percent, were nonunion employees. Skilled workers numbered 105,662, or 56.8 percent, semiskilled 42,850, or 23.0 percent, and unskilled 37,633, or 20.2 percent. The average rates paid to all employees are, therefore, weighted accordingly. The ratio roughly represents the proportion in which these degrees of skill were in evidence in the building operations scheduled in this survey.

Although the average hourly rate for all workers in 1936 was 91.8 cents, there were wide variations in the different occupational groups. (See table 1.) The highest rates paid were reported for hoisting engineers, with an average of \$1.343 an hour. Ranking next were the structural-iron workers, with an average hourly rate of \$1.332. Other workers averaging \$1.30 or more were bricklayers, electricians (inside wiremen), and metal lathers. The lowest average rate was 51.1 cents for sheet-metal workers' helpers. None of the occupational groups listed in table 1 averaged less than 50 cents an hour.

A feature of the study of rates paid in the building trades is the large proportion of workers falling within the relatively high wage brackets. Of the 186,145 workers covered, 87,224, or 46.9 percent, received rates of \$1 an hour or more and almost two-thirds (65.5 percent) received 75 cents an hour or more. On the other hand, 22,957 workers (12.3 percent) received less than 50 cents an hour and somewhat more than a fifth (22 percent) received 50 cents and less than 75 cents an hour. (See table 2.)

TABLE 1.—Union and Nonunion Wages in Selected Occupations in the Building Trades, 1936, by Geographic Divisions

Occupation	United States						New England					
	Employees			Average per hour			Employees			Average per hour		
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
All occupations.....	186,145	126,014	60,131	\$0.918			13,222	8,832	4,390	\$0.899		
Bricklayers.....	14,811	12,959	1,852	1.304	\$1.351	\$0.972	1,247	1,024	223	1.210	\$1.248	\$1.034
Carpenters.....	33,040	23,258	9,782	1.048	1.150	.805	2,044	1,374	670	.980	1.066	.803
Cement finishers.....	4,024	3,087	937	1.119	1.222	.783	190	144	46	1.164	1.249	.898
Helpers.....	3,327	2,856	471	.865	.922	.519	23	15	8	.654	.703	.563
Electricians (inside wiremen).....	6,814	5,980	834	1.300	1.361	.862	490	372	118	1.106	1.172	.896
Helpers.....	1,486	991	495	.648	.720	.502	158	87	71	.637	.723	.531
Engineers, hoisting (2 or more drums).....	988	831	157	1.343	1.419	.942	89	82	7	1.323	1.352	.979
Helpers, not elsewhere classified.....	20,670	12,616	8,054	.667	.781	.489	869	341	528	.504	.719	.513
Hod carriers.....	7,361	5,499	1,862	.781	.850	.577	822	479	343	.676	.759	.561
Laborers, common.....	37,633	17,389	20,244	.516	.629	.420	2,838	1,765	1,073	.601	.671	.485
Lathers, wood.....	589	398	191	1.091	1.277	.704	30	27	3	1.268	1.309	.900
Lathers, metal.....	2,525	2,282	243	1.304	1.342	.949	242	233	9	1.398	1.418	.881
Mixer operators.....	510	281	229	.871	1.038	.667	31	5	26	.890	1.210	.629
Painters.....	9,542	5,688	3,854	.935	1.092	.702	860	547	320	.885	1.001	.686
Plasterers.....	6,800	5,797	1,003	1.292	1.354	.938	505	449	56	1.271	1.303	1.011
Plumbers.....	6,042	4,942	1,100	1.224	1.284	.954	464	333	131	1.128	1.208	.925
Helpers.....	2,358	1,418	940	.612	.699	.482	126	50	76	.530	.585	.494

TABLE 1.—Union and Nonunion Wages in Selected Occupations in the Building Trades, 1936, by Geographic Divisions—Continued

Occupation	United States						New England					
	Employees			Average per hour			Employees			Average per hour		
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
Reinforcing steel workers (rodmen).....	1,981	1,512	469	\$1.089	\$1.155	\$0.876	92	81	11	\$1.252	\$1.284	\$1.018
Roofers, composition.....	2,636	1,478	1,158	.944	1.123	.716	147	80	67	.961	1.193	.684
Roofers, slate or tile.....	531	306	225	1.083	1.213	.907	45	35	10	1.112	1.154	.965
Sheet-metal workers.....	3,482	2,360	1,122	1.079	1.202	.819	330	251	79	1.140	1.245	.803
Helpers.....	1,518	547	971	.511	.607	.457	127	34	93	.522	.687	.462
Steam fitters.....	3,388	2,983	405	1.260	1.302	.950	437	336	101	1.201	1.291	.902
Helpers.....	1,938	1,428	510	.723	.786	.548	197	127	70	.678	.754	.540
Stonemasons.....	1,219	1,026	193	1.278	1.354	.870	72	48	24	1.149	1.258	.931
Structural-iron workers.....	4,806	3,717	1,089	1.132	1.396	1.111	302	275	27	1.201	1.244	.759
Tile layers.....	1,934	1,673	261	1.205	1.248	.927	107	82	25	1.204	1.261	1.016
Helpers.....	2,007	1,540	467	.719	.792	.477	138	104	34	.774	.800	.695
Truck drivers:												
Under 1½ tons.....	255	111	144	.518	.580	.471	4	(1)	3	.475	-----	.483
1½ to 5 tons.....	1,700	886	814	.630	.718	.535	137	18	119	.528	.646	.511
Over 5 tons.....	230	175	55	.822	.876	.648	52	33	19	.673	.702	.624
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Occupation	Middle Atlantic						East North Central					
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
All occupations.....	45,906	37,783	8,123	\$1.062	-----	-----	41,180	30,796	10,384	\$0.982	-----	-----
Bricklayers.....	4,796	4,341	455	1.399	\$1.447	\$0.931	4,208	3,923	285	1.314	\$1.335	\$1.030
Carpenters.....	6,529	5,269	1,260	1.165	1.241	.845	7,308	5,726	1,582	1.132	1.224	.802
Cement finishers.....	1,054	991	63	1.265	1.295	.798	1,121	887	234	1.124	1.212	.791
Helpers.....	2,669	2,536	133	.919	.937	.579	211	159	52	.798	.883	.540
Electricians (inside wiremen).....	2,199	2,065	134	1.483	1.521	.889	1,424	1,335	89	1.321	1.341	1.024
Helpers.....	406	341	65	.776	.811	.593	159	131	28	.731	.771	.545
Engineers, hoisting (2 or more drums).....	268	257	11	1.605	1.618	1.305	218	184	34	1.334	1.382	1.072
Helpers, not elsewhere classified.....	4,570	3,499	1,071	.748	.802	.570	5,170	4,242	928	.805	.868	.516
Hod carriers.....	3,181	2,675	506	.850	.897	.602	1,548	1,015	533	.750	.801	.653
Laborers, common.....	5,499	3,423	2,076	.538	.572	.483	9,114	5,152	3,962	.613	.704	.494
Lathers, wood.....	170	134	36	1.220	1.367	.671	69	53	16	1.179	1.330	.678
Lathers, metal.....	1,061	965	96	1.348	1.387	.962	408	350	58	1.300	1.365	.908
Mixer operators.....	70	56	14	1.147	1.193	.964	97	62	35	.988	1.160	.682
Painters.....	1,922	1,424	498	1.038	1.139	.749	1,640	1,001	639	1.045	1.246	.731
Plasterers.....	2,202	1,977	225	1.415	1.467	.953	1,032	910	122	1.324	1.372	.961
Plumbers.....	1,424	1,215	209	1.309	1.363	.992	1,283	1,185	98	1.286	1.310	1.001
Helpers.....	938	748	190	.721	.763	.556	254	137	117	.651	.761	.523
Reinforcing steel workers (rodmen).....	170	150	20	1.045	1.099	.640	440	354	86	1.052	1.143	.677
Roofers, composition.....	639	516	123	1.122	1.184	.862	581	377	204	1.038	1.200	.740
Roofers, slate or tile.....	115	46	69	1.147	1.219	1.099	133	103	30	1.148	1.247	.805
Sheet-metal workers.....	669	585	84	1.259	1.295	1.011	789	501	288	1.057	1.192	.823
Helpers.....	174	108	66	.553	.618	.446	290	98	192	.560	.668	.504
Steam fitters.....	859	814	45	1.311	1.324	1.083	892	860	32	1.317	1.329	.997
Helpers.....	805	703	102	.831	.872	.550	166	95	71	.669	.693	.636
Stonemasons.....	355	299	56	1.342	1.428	.888	242	222	20	1.337	1.383	.825
Structural-iron workers.....	1,735	1,463	272	1.486	1.505	1.388	1,300	903	397	1.269	1.348	1.090
Tile layers.....	534	491	43	1.302	1.344	.825	251	219	32	1.236	1.282	.923
Helpers.....	483	433	50	.887	.935	.472	252	207	45	.764	.816	.527
Truck drivers:												
Under 1½ tons.....	8	3	5	.575	.750	.470	108	56	52	.592	.623	.558
1½ to 5 tons.....	347	205	142	.639	.667	.600	412	290	122	.721	.773	.598
Over 5 tons.....	55	51	4	.870	.895	.550	60	59	(1)	1.018	1.027	-----
<hr/>												
Occupation	West North Central						South Atlantic					
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
All occupations.....	13,657	8,817	4,840	\$0.880	-----	-----	25,678	12,223	13,455	\$0.788	-----	-----
Bricklayers.....	943	773	170	1.273	\$1.328	\$1.022	1,731	1,279	452	1.199	\$1.287	\$0.950
Carpenters.....	2,459	1,676	783	.995	1.103	.765	4,385	2,017	2,368	.937	1.149	.756
Cement finishers.....	225	147	78	1.057	1.178	.828	511	292	219	.985	1.242	.643
Helpers.....	35	4	31	.481	.573	.469	131	25	106	.379	.582	.332
Electricians (inside wiremen).....	450	389	61	1.201	1.258	.832	915	713	202	1.231	1.355	.791
Helpers.....	73	28	44	.634	.765	.551	304	154	150	.522	.589	.452
Engineers, hoisting (2 or more drums).....	74	48	26	1.172	1.418	.718	138	94	44	1.321	1.531	.873

¹ Less than 3 employees. Data included in total.

TABLE 1.—Union and Nonunion Wages in Selected Occupations in the Building Trades 1936, by Geographic Divisions—Continued

Occupation	West North Central						South Atlantic					
	Employees			Average per hour			Employees			Average per hour		
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
Helpers not elsewhere classified.....	3,383	1,623	1,760	\$0.595	\$0.746	\$0.456	952	311	641	\$0.487	\$0.585	\$0.440
Hod carriers.....	434	357	77	.806	.859	.557	294	121	173	.521	.604	.463
Laborers, common.....	1,457	770	687	.693	.735	.435	7,665	2,350	5,315	.431	.560	.374
Lathers, wood.....	51	33	18	.995	1.167	.681	119	63	56	.896	1.071	.699
Lathers, metal.....	136	133	3	1.275	1.281	.983	181	161	20	1.236	1.263	1.018
Mixer operators.....	63	23	40	.664	.781	.597	63	24	39	.731	1.107	.499
Painters.....	721	446	275	.955	1.110	.704	1,720	585	1,135	.797	1.047	.668
Plasterers.....	452	410	42	1.227	1.255	.960	1,113	827	286	1.158	1.248	.897
Plumbers.....	450	397	53	1.234	1.275	.921	950	641	309	1.127	1.253	.867
Helpers.....	88	22	66	.602	.598	.470	437	224	213	.452	.509	.392
Reinforcing steel workers (rodmen).....	133	109	24	1.213	1.296	.835	438	278	160	1.127	1.274	.870
Roofers, composition.....	156	74	82	.954	1.157	.770	340	95	245	.771	1.019	.675
Roofers, slate or tile.....	37	27	10	1.247	1.394	.850	114	56	58	1.021	1.192	.857
Sheet-metal workers.....	327	190	137	1.055	1.201	.851	405	193	212	.997	1.245	.772
Helpers.....	165	57	108	.511	.578	.476	273	37	236	.430	.594	.404
Steam fitters.....	286	273	13	1.295	1.309	1.004	399	245	154	1.120	1.260	.898
Helpers.....	137	105	32	.721	.778	.633	344	239	105	.614	.685	.455
Stonemasons.....	125	100	25	1.069	1.196	.562	285	252	33	1.350	1.384	1.097
Structural-iron workers.....	182	161	21	1.292	1.345	.883	402	294	108	1.365	1.565	.818
Tile layers.....	173	148	25	1.105	1.135	.929	315	242	73	1.242	1.339	.922
Helpers.....	199	150	49	.698	.757	.517	473	291	182	.592	.707	.408
Truck drivers:												
Under 1½ tons.....	46	27	19	.506	.534	.466	10	(1)	9	.355	-----	.344
1½ to 5 tons.....	162	104	58	.667	.737	.541	270	119	151	.554	.659	.471
Over 5 tons.....	36	13	23	.738	.752	.730	(1)	-----	-----	-----	-----	-----
Occupation	East South Central						West South Central					
	Employees			Average per hour			Employees			Average per hour		
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
All occupations.....	8,698	3,743	4,955	\$0.645	-----	-----	11,278	4,609	6,669	\$0.675	-----	-----
Bricklayers.....	597	557	40	1.197	\$1.211	\$1.005	708	549	159	1.138	\$1.208	\$0.894
Carpenters.....	1,426	1,053	373	.847	.896	.708	2,075	1,168	907	.883	.983	.753
Cement finishers.....	174	77	97	.806	1.005	.648	183	127	56	.947	1.008	.808
Helpers.....	6	-----	6	.450	-----	.450	33	4	29	.386	.538	.366
Electricians (inside wiremen).....	189	150	39	.989	1.043	.779	237	192	45	1.072	1.118	.874
Helpers.....	80	63	17	.487	.500	.438	72	51	21	.565	.599	.482
Engineers, hoisting (2 or more drums).....	50	39	11	1.019	1.070	.836	39	32	7	1.006	1.008	1.000
Helpers not elsewhere classified.....	592	41	551	.413	.468	.409	1,480	347	1,142	.437	.461	.429
Hod carriers.....	213	207	6	.571	.575	.425	241	86	155	.455	.551	.401
Laborers, common.....	3,188	136	3,052	.338	.352	.337	3,364	517	2,847	.359	.363	.359
Lathers, wood.....	27	10	17	.917	1.030	.850	33	(1)	31	.633	-----	.601
Lathers, metal.....	81	68	13	1.027	1.073	.788	138	119	19	1.116	1.148	.914
Mixer operators.....	26	10	16	.009	.683	.563	35	25	10	.801	.848	.685
Painters.....	381	263	118	.839	.923	.650	741	289	452	.763	.960	.637
Plasterers.....	233	179	54	1.085	1.108	1.010	339	223	116	1.057	1.161	.857
Plumbers.....	186	156	30	1.116	1.152	.930	321	239	82	1.183	1.249	.991
Helpers.....	88	27	61	.439	.491	.416	118	31	87	.461	.609	.408
Reinforcing steel workers (rodmen).....	137	114	23	.855	.893	.665	112	92	20	.946	.936	.993
Roofers, composition.....	181	79	102	.561	.607	.526	125	18	107	.603	.611	.602
Roofers, slate or tile.....	11	5	6	.795	.940	.675	32	5	27	.820	1.100	.768
Sheet-metal workers.....	150	123	27	.907	.936	.772	148	95	53	1.095	1.245	.828
Helpers.....	89	43	46	.437	.444	.431	69	10	59	.425	.460	.419
Steam fitters.....	142	130	12	1.144	1.165	.921	51	47	4	1.190	1.195	1.125
Helpers.....	123	51	72	.550	.521	.671	31	21	10	.573	.642	.430
Stonemasons.....	51	46	5	1.156	1.182	.922	52	28	24	.994	1.205	.748
Structural-iron workers.....	71	39	32	1.028	1.123	.912	177	135	42	1.004	1.013	.974
Tile layers.....	50	36	14	.987	1.044	.839	113	93	20	1.156	1.187	1.013
Helpers.....	41	9	32	.456	.533	.434	97	50	47	.480	.490	.471
Truck drivers:												
Under 1½ tons.....	10	-----	10	.354	-----	.354	45	14	31	.408	.446	.391
1½ to 5 tons.....	94	21	73	.459	.612	.415	54	-----	54	.448	-----	.448
Over 5 tons.....	11	11	-----	.608	.668	-----	6	-----	6	.532	-----	.532
Occupation	Mountain						Pacific					
	Employees			Average per hour			Employees			Average per hour		
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
All occupations.....	4,745	3,285	1,457	\$0.901	-----	-----	21,781	15,923	5,858	\$0.921	-----	-----
Bricklayers.....	268	240	28	1.278	\$1.320	\$0.915	313	273	40	1.348	\$1.410	\$0.928
Carpenters.....	1,016	750	266	1.086	1.187	.801	5,798	4,225	1,573	1.043	1.088	.924
Cement finishers.....	91	65	26	1.103	1.174	.925	475	357	118	1.125	1.163	1.012
Helpers.....	49	21	28	.694	.788	.624	170	92	78	.742	.780	.697

¹ Less than 3 employees. Data included in total.

TABLE 1.—Union and Nonunion Wages in Selected Occupations in the Building Trades, 1936, by Geographic Divisions—Continued

Occupation	Mountain						Pacific					
	Employees			Average per hour			Employees			Average per hour		
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
Electricians (inside wiremen).....	168	147	21	\$1.171	\$1.207	\$0.919	742	617	125	\$1.174	\$1.244	\$0.828
Helpers.....	47	36	11	.654	.692	.532	188	100	88	.616	.744	.471
Engineers, hoisting (2 or more drums).....	22	19	3	1.170	1.224	.833	90	76	14	1.147	1.167	1.038
Helpers, not elsewhere classified.....	634	221	413	.565	.665	.512	3,011	1,991	1,020	.650	.700	.553
Hod carriers.....	197	165	32	.818	.859	.606	431	394	37	1.004	1.042	.606
Laborers, common.....	763	592	171	.497	.512	.444	3,745	2,684	1,061	.627	.650	.570
Lathers, wood.....	26	20	6	1.188	1.338	.688	64	56	8	1.283	1.321	1.018
Lathers, metal.....	54	38	16	1.104	1.148	1.000	224	215	9	1.337	1.343	1.211
Mixer operators.....	38	18	20	.752	.901	.617	87	58	29	.922	1.001	.765
Painters.....	388	292	96	1.067	1.164	.771	1,162	841	321	.932	.982	.800
Plasterers.....	157	110	47	1.195	1.347	.838	767	712	55	1.336	1.351	1.141
Plumbers.....	142	125	17	1.250	1.284	1.000	822	651	171	1.177	1.209	1.054
Helpers.....	33	19	14	.648	.733	.532	276	160	116	.649	.709	.565
Reinforcing steel workers (rodmen).....	42	33	9	1.089	1.136	.917	417	301	116	1.147	1.171	1.086
Roofers, composition.....	73	23	50	.909	1.045	.847	394	216	178	.949	1.093	.774
Roofers, slate or tile.....	17	12	5	.949	1.042	.725	27	17	10	.995	1.119	.785
Sheet-metal workers.....	132	78	54	.965	1.142	.711	532	344	188	.995	1.102	.799
Helpers.....	53	24	29	.520	.633	.426	278	136	142	.552	.606	.500
Steam fitters.....	68	62	6	1.205	1.228	.967	254	216	38	1.262	1.296	1.065
Helpers.....	17	10	7	.628	.708	.514	118	77	41	.693	.716	.651
Stonemasons.....	22	18	4	1.165	1.201	1.000	15	13	(1)	1.308	1.317	-----
Structural-iron workers.....	89	72	17	1.183	1.224	1.007	548	375	173	1.220	1.290	1.069
Tile-layers.....	47	25	22	1.137	1.218	1.045	344	337	7	1.105	1.110	.857
Helpers.....	50	26	24	.661	.736	.558	274	270	(1)	.723	.723	-----
Truck drivers:												
Under 1½ tons.....	(1)	-----	-----	-----	-----	-----	21	8	13	.555	.637	.504
1½ to 5 tons.....	34	21	13	.676	.738	.577	190	108	82	.698	.744	.638
Over 5 tons.....	5	5	-----	.850	.850	-----	4	3	(1)	.800	.875	-----

¹ Less than 3 employees. Data included in total.

For 16 of the selected occupations in table 1, the average wage rate paid to union and nonunion employees combined was in excess of \$1 an hour and in 8 of these it was in excess of \$1.25 an hour: Hoisting engineers, \$1.343; structural-iron workers, \$1.332; bricklayers, \$1.304; metal lathers, \$1.304; electricians (inside wiremen), \$1.300; plasterers \$1.292; stonemasons, \$1.278; and steam fitters, \$1.260.

The occupations whose nation-wide average was from \$1 to \$1.24 an hour were plumbers (\$1.224), tile layers (\$1.205), cement finishers (\$1.119), wood lathers (\$1.091), reinforcing steel workers, or rodmen (\$1.089), slate or tile roofers (\$1.083), sheet-metal workers (\$1.079), and carpenters (\$1.048). Of the skilled occupations, painters were paid the lowest average wage rate—\$0.935 per hour.

In the building industry many contractors do not own and operate their own trucks. Frequently, commercial trucking companies are utilized for hauling, or supply companies deliver building material to the site. No truck drivers were considered in the survey unless the contractor owned the truck and employed some person as a driver. Contractors operating their own trucks used, for the most part, trucks fo from 1½ to 5 tons capacity. Of the 2,185 truck drivers scheduled,

1,700 or 77.8 percent operated trucks of this capacity; 255 or 11.7 percent operated trucks of less than 1½ tons rated capacity; 230 or 10.5 percent operated trucks of over 5 tons rated capacity. The average wage rate for all truck drivers was 63.7 cents per hour.

The occupation of mixer operators, due to the increasing use of premixed concrete, is fading out of the picture in the building trades. Only 510 mixer operators were scheduled in the present survey. In 51 of the 105 cities covered, no mixer operators were working at the time of this survey. The absence of mixer operators was most noticeable in the smaller cities.

Because metal lath and composition board have been replacing wooden lath in the building industry, the occupation of wood lather is also slowing disappearing. Only 589 wood lathers were reported by the contractors. In 63 of the 105 cities studied, none were found working. In 25 cities no lathers of any kind were reported, the work being done by carpenters. Metal lathers were reported in 72 cities, and in 31 cities both metal and wood lathers were found.

The classification "Helpers, not elsewhere classified" contains the following classes of workers: Helpers serving bricklayers, carpenters, painters, plasterers, rodmen, roofers, stonemasons, and structural-iron workers. These employees were grouped together to simplify tabulation. There were 20,670 of them and their combined average hourly rate was 66.7 cents an hour. When combined with the 12,634 other helpers, the average hourly rate of the whole group was 68.1 cents.

Type of financing and average hourly rates paid.—Of the workers covered by the survey, 108,636 (58.4 percent) were employed on private building-construction projects and 77,509 (41.6 percent) on public building. The average wage rate paid to all employees working on private projects was 90.4 cents per hour and on public projects the average was 93.8 cents per hour. Skilled workers on private projects received an average rate of \$1.016 per hour and on public projects of \$1.227 per hour. Semiskilled workers received 67.4 cents per hour on private projects and 72.7 cents per hour on public works. Unskilled workers received 47.1 cents per hour on private projects and 55.6 cents per hour on public works.

As indicated below, for the 12,634 helpers the average hourly rate paid to those employed on public works was higher than that paid on private construction.

	Public construction (cents)	Private construction (cents)
Cement finishers' helpers.....	91. 3	81. 5
Electricians' helpers.....	68. 6	62. 0
Plumbers' helpers.....	64. 6	59. 7
Sheet-metal workers' helpers.....	57. 5	56. 4
Steam fitters' helpers.....	74. 8	71. 5
Tile layers' helpers.....	94. 4	70. 3
Helpers, not elsewhere classified.....	65. 6	65. 4

In 39 of the cities studied the average wage rate paid to workers on private projects was higher than that paid to workers on public works. In one city the rates were identical, in two cities no public works were being built at the time of the survey, and in 63 cities the rates paid on public works were higher than the rates paid on private projects.

In the cities where the rates were higher on private than on public projects the differential in favor of employees in private construction was 3.7 cents per hour. Butte, Mont., showed the widest spread, 24.7 cents; and Lansing, Mich., the least difference, 0.2 cent per hour. In the 63 cities where rates were higher on public construction, the average amount of the difference was 9.1 cents per hour, with the widest spread in Camden, N. J., 44.6 cents per hour, and the least in Minneapolis, Minn., 0.1 cent per hour. Geographic location apparently had no bearing on these rate differentials.

Geographic differentials.—Hourly rates paid in the building trades not only vary widely among occupations, but as in most other industries show sharp regional differences. In 1936 the highest average rate, \$1.062 an hour, was shown for the Middle Atlantic region and the lowest, 64.5 cents an hour, for the East South Central division, a spread of 41.7 cents an hour. Ranking next to the Middle Atlantic States was the East North Central region, with an average rate of 98.2 cents. Other areas with relatively high average rates were the Pacific and Mountain regions. The average hourly rate in New England, 89.9 cents, was 15 percent below that for the Middle Atlantic States.

The lower-rate areas other than the East South Central include the West South Central (67.5 cents), the South Atlantic (78.8 cents), and the West North Central (88 cents). The average rate paid in the East South Central, 64.5 cents, was 23.5 cents below the 88 cents paid in the West North Central States.

In the East South Central, Mountain, and Pacific regions, the average rate paid to bricklayers exceeded that of all other occupations. Top rank was held in New England by metal lathers, in the Middle Atlantic States by hoisting engineers, in the East North Central and the South Atlantic regions by structural-iron workers, and in the West North Central and the West South Central regions by steam fitters.

In both the East South Central and West South Central regions not one of the occupational groups listed in table 1 had an average rate of \$1.25 an hour or more. Only 8 groups in the East South Central region and 10 groups in the West South Central region averaged \$1 an hour or more. In striking contrast, 21 of the occupational groups in the Middle Atlantic States averaged at least \$1 an hour and 12 exceeded \$1.25 an hour. Nineteen of the occupational groups in the East North Central region also averaged \$1 or more per hour, and 10 averaged \$1.25 or more per hour.

Geographic differentials in average hourly rates paid for various types of skill were well defined. (See table 6.) The highest average rate paid to skilled workers was \$1.229 per hour in the Middle Atlantic region and the lowest was 94 cents per hour in the East South Central States, a difference of 35.9 cents. The highest average rate paid to semiskilled workers was 80.9 cents per hour in the Middle Atlantic division and the lowest was 44.7 cents per hour in the West South Central region. The highest average rate paid to unskilled workers was 62.7 cents per hour in the Pacific division and the lowest was 33.8 cents per hour in the East South Central, a difference of 28.9 cents per hour.

Actual hourly rates paid.—Actual hourly rates paid in the building trades ranged from 15 cents to \$2.50 per hour. (See table 2.) Of all employees, 87,224, or 46.9 percent, received \$1 or more; 121,986, or 65.5 percent, received 75 cents or more; 22,957, or 12.3 percent, received less than 50 cents; and 41,124, or 22 percent, received 50 cents and under 75 cents per hour.

For the country as a whole, 0.2 percent of all employees received less than 25 cents per hour; 12.2 percent received 25 cents and under 50 cents; 22.1 percent received 50 cents and under 75 cents; 18.7 percent received 75 cents and under \$1; 20.6 percent received \$1 and under \$1.25; 16.9 percent received \$1.25 and under \$1.50; 9.1 percent received \$1.50 and under \$1.75; and 0.3 percent received over \$1.75 per hour.

The over-all average hourly rate paid to building-trades workers, 91.8 cents, is among the highest paid in industry, but it should be noted that nearly 50 percent of the employees covered by this survey received less than the average rate, and that there were thousands of employees in the industry (common laborers and building laborers in the semiskilled class) who received rates ranging from 15 cents to 75 cents per hour.

TABLE 2.—Number and Percent of Building-Trades Employees Receiving Each Classified Rate Per Hour, 1936

Classified rate per hour	Num- ber	Sim- ple per- cent- age	Cu- mula- tive per- cent- age	Classified rate per hour	Num- ber	Sim- ple per- cent- age	Cu- mula- tive per- cent- age
All employees.....	186,145	100.0	100.0	97½ and under \$1.02½.....	17,541	9.5	62.4
Under 22½ cents.....	288	0.2	0.2	\$1.02½ and under \$1.07½.....	2,920	1.6	64.0
22½ and under 27½ cents.....	1,703	.9	1.1	\$1.07½ and under \$1.12½.....	5,616	3.0	67.0
27½ and under 32½ cents.....	3,252	1.7	2.8	\$1.12½ and under \$1.17½.....	6,518	3.5	70.5
32½ and under 37½ cents.....	2,080	1.1	3.9	\$1.17½ and under \$1.22½.....	5,863	3.2	73.7
37½ and under 42½ cents.....	11,871	6.4	10.3	\$1.22½ and under \$1.27½.....	15,378	8.3	82.0
42½ and under 47½ cents.....	3,748	2.0	12.3	\$1.27½ and under \$1.32½.....	2,860	1.5	83.5
47½ and under 52½ cents.....	14,734	7.9	20.2	\$1.32½ and under \$1.37½.....	892	.5	84.0
52½ and under 57½ cents.....	3,632	2.0	22.2	\$1.37½ and under \$1.42½.....	11,251	6.0	90.0
57½ and under 62½ cents.....	7,878	4.2	26.4	\$1.42½ and under \$1.47½.....	1,147	.6	90.6
62½ and under 67½ cents.....	8,382	4.5	30.9	\$1.47½ and under \$1.52½.....	14,104	7.6	98.2
67½ and under 72½ cents.....	6,513	3.5	34.4	\$1.52½ and under \$1.57½.....	85	(1)	98.2
72½ and under 77½ cents.....	9,355	5.0	39.4	\$1.57½ and under \$1.62½.....	27	(1)	98.2
77½ and under 82½ cents.....	7,753	4.2	43.6	\$1.62½ and under \$1.67½.....	1,469	.8	99.0
82½ and under 87½ cents.....	3,537	1.9	45.5	\$1.67½ and under \$1.72½.....	1,295	.7	99.7
87½ and under 92½ cents.....	8,240	4.4	49.9	\$1.72½ and under \$1.77½.....	478	.3	100.0
92½ and under 97½ cents.....	5,666	3.0	52.9	\$1.77½ and over.....	69	(1)	100.0

¹ Less than 1/10 of 1 percent.

Rates of union and nonunion workers.—In a study so extensive, it was impracticable to check every one of the employees scheduled, in order to learn if he were a union member in good standing at the time the pay roll was scheduled. Field representatives were instructed to ask each contractor to designate the union and nonunion men on his pay rolls. The contractor's word was not questioned, nor was the resulting information checked. As far as the Bureau was able to judge, the contractors cooperating in the study realized the importance of securing a Nation-wide picture of prevailing wage rates in this industry, and apparently furnished information as nearly accurate as could be obtained from their records. But, obviously, information collected wholly from the contractors cannot be expected to give a precise picture of union membership in the industry.

Even with these limitations, the results of the survey indicate convincingly that for all occupations and in all parts of the country, union rates are substantially above nonunion rates. The differential is accounted for partly by the fact that a greater proportion of the union workers were in the skilled categories. Of all skilled workers, 76.2 percent were reported by the contractors to be union members, in contrast to 23.8 percent who were nonunion workers. This difference is indicated in table 3 for a few sample occupations in typical selected cities. The widest spread between union and nonunion rates was seen in the rates for electricians in New York City. Union workers in this craft received an average of 81.7 cents more than nonunion workers. The smallest difference was found in the rates for plumbers in New Orleans, where union workers received 2.5 cents per hour more than nonunion workers. It is impossible statistically to weigh the degree of skill of the workers reported, or to estimate how far individual efficiency affects the average hourly rates of union and nonunion workers, but this is a factor entering into the differential.

TABLE 3.—Average Hourly Union and Nonunion Wages in Sample Building-Trades Occupations in Typical Cities, 1936

City	Bricklayers				Carpenters			
	Total	Union rate	Non-union rate	Difference	Total	Union rate	Non-union rate	Difference
Atlanta, Ga.....	\$0.996	\$1.126	\$0.775	\$0.351	\$0.723	\$1.004	\$0.673	\$0.331
Chicago, Ill.....	1.487	1.487	(¹)	-----	1.460	1.495	1.000	.495
Cleveland, Ohio.....	1.375	1.375	(¹)	-----	1.216	1.252	.703	.549
Denver, Colo.....	1.160	1.234	.831	.403	1.046	1.217	.761	.456
New Orleans, La.....	.981	(²)	.981	-----	.683	.750	.672	.078
New York, N. Y.....	1.443	1.501	.926	.575	1.302	1.390	.907	.483
St. Louis, Mo.....	1.445	1.464	.971	.493	1.173	1.235	.730	.505
San Francisco, Calif.....	1.491	1.491	(¹)	-----	1.095	1.108	1.053	.055
City	Electricians				Plumbers			
	Total	Union rate	Non-union rate	Difference	Total	Union rate	Non-union rate	Difference
Atlanta, Ga.....	\$0.985	\$1.042	\$0.875	\$0.167	\$1.081	\$1.125	\$0.971	\$0.154
Chicago, Ill.....	1.465	1.465	(¹)	-----	1.495	1.495	(¹)	-----
Cleveland, Ohio.....	1.503	1.503	(¹)	-----	1.375	1.375	(¹)	-----
Denver, Colo.....	1.222	1.250	1.000	.250	1.239	1.294	1.019	.275
New Orleans, La.....	1.250	1.250	(¹)	-----	1.039	1.050	1.025	.025
New York, N. Y.....	1.600	1.700	.883	.817	1.452	1.494	1.060	.434
St. Louis, Mo.....	1.420	1.478	.786	.692	1.352	1.439	.853	.586
San Francisco, Calif.....	1.248	1.251	1.181	.070	1.199	1.201	1.171	.030
City	Sheet-metal workers				Structural-iron workers			
	Total	Union rate	Non-union rate	Difference	Total	Union rate	Non-union rate	Difference
Atlanta, Ga.....	\$0.820	\$1.031	\$0.768	\$0.263	\$1.250	\$1.250	(¹)	-----
Chicago, Ill.....	1.435	1.496	1.158	.338	1.342	1.481	\$1.124	\$0.357
Cleveland, Ohio.....	1.189	1.245	.995	.250	1.375	1.375	(¹)	-----
Denver, Colo.....	1.150	1.245	.580	.665	1.247	1.247	(¹)	-----
New Orleans, La.....	.864	1.050	.808	.242	1.175	(¹)	1.175	-----
New York, N. Y.....	1.397	1.399	1.369	.030	1.603	1.609	1.562	.047
St. Louis, Mo.....	1.303	1.372	.789	.583	1.476	1.476	(¹)	-----
San Francisco, Calif.....	1.039	1.040	1.025	.015	1.387	1.387	(¹)	-----

¹ No nonunion workers reported.² No union workers reported.

In connection with table 3, slightly more than two-thirds of the employees covered in the survey were reported by the contractors to be union workers. The union strongholds, however, are in the North. In the Middle Atlantic region, for example, 82.3 percent of the workers covered were union members, according to the contractors, and nearly three-fourths of the workers scheduled in the East North Central and the Pacific regions were union members. By contrast, less than half of the workers covered in the Southern States (South Atlantic, East South Central, and West South Central regions) belonged to labor unions.

The difference between union and nonunion rates is still more marked when comparison is made between individual occupations. This relationship is indicated by table 4, which shows the average hourly wage rates for union and nonunion journeymen. The most striking difference is shown in rates paid to wood lathers, the union average being \$1.277 an hour as against 70.4 cents for nonunion men, a spread of 57.3 cents. Wide margins in favor of the unionized workers are also indicated for electricians, hoisting engineers, stonemasons,

cement finishers, plasterers, and composition roofers. The smallest difference, 27.9 cents, is shown for reinforcing steel workers.

TABLE 4.—Average Hourly Union and Nonunion Wages in Selected Building-Trades Occupations, 1936

Occupation	Union rate	Non-union rate	Difference	Occupation	Union rate	Non-union rate	Difference
Bricklayers.....	\$1.351	\$0.972	\$0.379	Plasterers.....	\$1.354	\$0.938	\$0.416
Carpenters.....	1.150	.805	.345	Plumbers.....	1.284	.954	.330
Cement finishers.....	1.222	.783	.439	Reinforcing steel workers (rodmen).....	1.155	.876	.279
Electricians (inside wiremen).....	1.361	.862	.499	Roofers, composition.....	1.123	.716	.407
Engineers, hoisting (2 or more drums).....	1.419	.942	.477	Roofers, slate or tile.....	1.213	.907	.306
Lathers, wood.....	1.277	.704	.573	Sheet-metal workers.....	1.202	.819	.383
Lathers, metal.....	1.342	.949	.393	Steam fitters.....	1.302	.950	.352
Mixer operators.....	1.038	.667	.371	Stonemasons.....	1.354	.870	.484
Painters.....	1.092	.702	.390	Structural-iron workers.....	1.396	1.111	.285
				Tile layers.....	1.248	.927	.321

All of the union crafts in the selected occupations shown were paid average rates of \$1 or more per hour. Journeyman structural-iron workers, with an average paid rate of \$1.11 an hour, were the only nonunion workers receiving more than \$1 per hour. Ten of the union crafts received \$1.25 or more.

Wage rates by size of city.—As in most other trades and industries, wage rates in building construction tend to vary directly with the size of city. Rates are highest in the large metropolitan areas and are progressively lower as the size of the cities decreases. This tendency is illustrated by table 5. From this table it will be seen that the average hourly rate paid to both union and nonunion workers in cities with a population of 500,000 to 1,000,000 was 6.9 percent less than in cities with a population of 1,000,000 or over. The margin was progressively widened until in cities with a population of 50,000 to 100,000 the average rate was 23.4 percent less than that in cities with a population of more than 1,000,000.

TABLE 5.—Average Hourly Union and Nonunion Wages in Selected Building-Trades Occupations, by Size of City, 1936

Occupation	United States						Cities of over 1,000,000 population								
	Employees			Average per hour			Employees			Average per hour					
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
All occupations.....	186, 145	126, 014	60, 131	\$0. 918			56, 273	44, 042	12, 231	\$1. 059					
Bricklayers.....	14, 811	12, 959	1, 852	1. 304	\$1. 351	\$0. 972	5, 162	4, 693	469	1. 404	\$1. 448	\$0. 966			
Carpenters.....	33, 040	23, 258	9, 782	1. 048	1. 150	. 805	9, 029	6, 624	2, 405	1. 167	1. 271	. 882			
Cement finishers.....	4, 024	3, 087	937	1. 119	1. 222	. 783	1, 404	1, 167	237	1. 243	1. 315	. 887			
Helpers.....	3, 327	2, 856	471	. 865	. 922	. 519	2, 778	2, 632	146	. 919	. 938	. 576			
Electricians (inside wiremen).....	6, 814	5, 950	834	1. 300	1. 361	. 862	2, 343	2, 107	236	1. 475	1. 539	. 911			
Helpers.....	1, 486	991	495	. 648	. 720	. 502	369	244	125	. 786	. 919	. 526			
Engineers, hoisting (2 or more drums).....	988	831	157	1. 343	1. 419	. 942	354	324	30	1. 532	1. 570	1. 119			
Helpers, not elsewhere classified.....	20, 670	12, 616	8, 054	. 667	. 781	. 489	7, 010	5, 569	1, 441	. 806	. 864	. 586			
Hod carriers.....	7, 361	5, 499	1, 862	. 781	. 850	. 577	3, 192	2, 535	657	. 844	. 911	. 586			
Laborers, common.....	37, 633	17, 389	20, 244	. 516	. 629	. 420	7, 765	5, 229	2, 536	. 609	. 658	. 509			
Lathers, wood.....	589	398	191	1. 091	1. 277	. 704	179	162	17	1. 347	1. 402	. 820			
Lathers, metal.....	2, 525	2, 282	243	1. 304	1. 342	. 949	1, 097	990	107	1. 358	1. 399	. 979			
Mixer operators.....	510	281	229	. 871	1. 038	. 667	113	78	35	1. 026	1. 148	. 753			
Painters.....	9, 542	5, 688	3, 854	. 935	1. 092	. 702	2, 027	1, 219	808	1. 021	1. 177	. 785			
Plasterers.....	6, 800	5, 797	1, 003	1. 292	1. 354	. 938	2, 412	2, 166	246	1. 412	1. 460	. 997			
Plumbers.....	6, 042	4, 942	1, 100	1. 224	1. 284	. 954	1, 580	1, 290	290	1. 318	1. 383	1. 032			
Helpers.....	2, 358	1, 418	940	. 612	. 699	. 482	804	562	242	. 747	. 827	. 562			
Reinforcing steel workers (rodmen).....	1, 981	1, 512	469	1. 089	1. 155	. 876	471	300	171	1. 045	1. 113	. 924			
Roofers, composition.....	2, 636	1, 478	1, 158	. 944	1. 123	. 716	849	536	313	1. 081	1. 248	. 796			
Roofers, slate or tile.....	531	306	225	1. 083	1. 213	. 907	160	76	84	1. 180	1. 331	1. 044			
Sheet-metal workers.....	3, 482	2, 360	1, 122	1. 079	1. 202	. 819	897	581	316	1. 183	1. 346	. 889			
Helpers.....	1, 518	547	971	. 511	. 607	. 457	346	139	207	. 600	. 708	. 529			
Steam fitters.....	3, 388	2, 983	405	1. 260	1. 302	. 950	892	836	56	1. 359	1. 378	1. 081			
Helpers.....	1, 938	1, 428	510	. 723	. 786	. 548	609	507	102	. 898	. 955	. 614			
Stonemasons.....	1, 219	1, 026	193	1. 278	1. 354	. 870	414	364	50	1. 376	1. 442	. 895			
Structural-iron workers.....	4, 806	3, 717	1, 089	1. 332	1. 396	1. 111	2, 277	1, 645	632	1. 412	1. 501	1. 180			
Tile layers.....	1, 934	1, 673	261	1. 205	1. 248	. 927	630	605	25	1. 266	1. 287	. 762			
Helpers.....	2, 007	1, 540	467	. 719	. 792	. 477	541	503	38	. 899	. 930	. 492			
Truck drivers:															
Under 1½ tons.....	255	111	144	. 518	. 580	. 471	26	10	16	. 654	. 823	. 548			
1½ to 5 tons.....	1, 700	886	814	. 630	. 718	. 535	457	266	191	. 712	. 767	. 635			
Over 5 tons.....	230	175	55	. 822	. 876	. 648	85	84	(1)	. 967	. 973				
Cities of 500,000 to 1,000,000 population							Cities of 250,000 to 500,000 population								
All occupations.....	43, 253	34, 738	8, 515	\$0. 995			35, 296	21, 741	13, 555	\$0. 824					
Bricklayers.....	3, 204	2, 965	239	1. 347	\$1. 372	\$1. 038	2, 623	2, 298	325	1. 237	\$1. 281	\$0. 923			
Carpenters.....	8, 064	6, 312	1, 752	1. 118	1. 190	. 856	6, 569	4, 748	1, 821	1. 001	1. 097	. 750			
Cement finishers.....	819	720	99	1. 213	1. 271	. 787	821	653	168	1. 062	1. 123	. 829			
Helpers.....	142	94	48	. 775	. 795	. 734	188	74	114	. 577	. 723	. 483			
Electricians (inside wiremen).....	1, 082	1, 526	156	1. 364	1. 418	. 838	873	789	84	1. 147	1. 177	. 870			
Helpers.....	307	206	101	. 654	. 738	. 483	281	227	54	. 609	. 632	. 514			
Engineers, hoisting (2 or more drums).....	263	223	40	1. 413	1. 462	1. 140	150	132	18	1. 176	1. 217	. 874			
Helpers, not elsewhere classified.....	4, 626	3, 820	806	. 725	. 768	. 523	3, 071	1, 392	1, 679	. 576	. 703	. 470			
Hod carriers.....	1, 253	1, 075	178	. 872	. 881	. 820	1, 508	1, 232	276	. 711	. 731	. 618			
Laborers, common.....	8, 954	6, 212	2, 742	. 600	. 660	. 463	9, 133	3, 154	5, 979	. 476	. 604	. 409			
Lathers, wood.....	73	68	5	1. 300	1. 345	. 690	100	36	64	. 845	1. 231	. 628			
Lathers, metal.....	550	548	(1)	1. 427	1. 428		411	366	45	1. 167	1. 205	. 858			
Mixer operators.....	74	57	17	1. 023	1. 124	. 685	115	71	44	. 891	. 993	. 726			
Painters.....	2, 764	1, 881	883	1. 011	1. 159	. 697	1, 932	1, 088	844	. 879	1. 056	. 651			
Plasterers.....	1, 386	1, 334	52	1. 411	1. 431	. 891	1, 153	916	237	1. 158	1. 246	. 817			
Plumbers.....	1, 645	1, 348	297	1. 255	1. 336	. 887	1, 069	912	157	1. 204	1. 241	. 990			
Helpers.....	383	253	130	. 573	. 634	. 453	429	259	170	. 576	. 655	. 455			

¹ Less than 3 employees. Data included in totals.

TABLE 5.—Average Hourly Union and Nonunion Wages in Selected Building-Trades Occupations, by Size of City, 1936—Continued

Occupation	Cities of 500,000 to 1,000,000 population						Cities of 250,000 to 500,000 population					
	Employees			Average per hour			Employees			Average per hour		
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
Reinforcing steel workers (rodman).....	647	482	165	\$1.193	\$1.301	\$0.877	505	473	32	\$1.089	\$1.107	\$0.819
Roofers, composition.....	499	431	68	1.118	1.173	.770	492	182	310	.750	.972	.620
Roofers, slate or tile.....	115	90	25	1.240	1.329	.919	94	61	33	.974	1.105	.733
Sheet-metal workers.....	783	696	87	1.199	1.233	.931	682	484	198	1.038	1.135	.802
Helpers.....	213	86	127	.510	.568	.470	365	151	214	.510	.617	.435
Steam fitters.....	1,087	1,024	63	1.330	1.351	1.002	554	491	63	1.223	1.249	1.015
Helpers.....	540	446	94	.752	.786	.590	288	181	107	.628	.662	.571
Stonemasons.....	427	404	23	1.342	1.361	.998	114	86	28	1.182	1.269	.914
Structural-iron workers.....	1,212	1,089	123	1.371	1.385	1.242	518	440	78	1.224	1.260	1.020
Tile layers.....	416	386	30	1.253	1.279	.912	372	308	64	1.119	1.163	.910
Helpers.....	577	541	36	.769	.782	.578	355	259	96	.641	.705	.469
Truck drivers:												
Under 1½ tons.....	54	37	17	.542	.584	.451	90	30	60	.490	.600	.435
1½ to 5 tons.....	433	334	99	.678	.701	.602	377	214	163	.603	.691	.488
Over 5 tons.....	61	50	11	.738	.760	.636	64	34	30	.729	.807	.640
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Occupation	Cities of 100,000 to 250,000 population						Cities of 50,000 to 100,000 population					
	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
All occupations ¹	30,183	14,969	15,214	\$0.777			13,959	6,928	7,031	\$0.732		
Bricklayers.....	2,265	1,880	385	1.193	\$1.243	\$0.951	1,115	800	315	1.136	\$1.200	\$0.975
Carpenters.....	5,292	3,022	2,270	.912	1.000	.795	2,688	1,649	1,039	.878	.995	.692
Cement finishers.....	594	332	262	.921	1.097	.698	260	164	96	.905	1.038	.678
Helpers.....	90	35	55	.512	.626	.439	75	20	55	.434	.740	.323
Electricians (inside wiremen).....	1,257	1,041	216	1.142	1.200	.860	423	348	75	1.021	1.069	.796
Helpers.....	326	210	116	.597	.640	.519	118	61	57	.509	.573	.442
Engineers, hoisting (2 or more drums).....	150	106	44	1.096	1.230	.773	51	36	15	1.049	1.175	.747
Helpers, not elsewhere classified.....	3,489	1,166	2,323	.506	.602	.458	1,329	337	992	.489	.657	.432
Hod carriers.....	782	379	403	.628	.770	.494	320	144	176	.632	.790	.503
Laborers, common.....	6,915	1,196	5,719	.424	.558	.396	3,717	1,110	2,607	.422	.534	.375
Lathers, wood.....	104	49	55	.924	1.104	.764	76	38	38	.867	1.082	.651
Lathers, metal.....	286	244	42	1.168	1.209	.929	111	100	11	1.189	1.223	.882
Mixer operators.....	85	36	49	.763	1.006	.584	61	19	42	.714	.775	.686
Painters.....	1,564	859	705	.850	.970	.705	797	374	423	.782	.930	.651
Plasterers.....	1,145	870	275	1.144	1.192	.990	454	348	106	1.091	1.158	.868
Plumbers.....	1,064	838	226	1.137	1.188	.945	427	369	58	1.109	1.138	.924
Helpers.....	467	222	245	.521	.603	.446	165	87	78	.470	.508	.426
Reinforcing steel workers (rodmen).....	236	172	64	.959	1.026	.778	84	65	19	.987	1.005	.924
Roofers, composition.....	487	226	261	.811	.907	.728	199	69	130	.789	1.024	.664
Roofers, slate or tile.....	114	64	50	1.000	1.098	.874	26	10	16	.817	.920	.753
Sheet-metal workers.....	614	357	257	.958	1.099	.762	298	162	136	.937	1.060	.792
Helpers.....	309	92	217	.457	.528	.427	167	42	125	.437	.452	.432
Steam fitters.....	555	393	162	1.095	1.182	.884	198	179	19	1.114	1.132	.939
Helpers.....	313	185	128	.540	.585	.475	138	91	47	.522	.537	.493
Stonemasons.....	175	123	52	1.124	1.219	.900	62	27	35	.894	1.177	.675
Structural-iron workers.....	520	388	132	1.116	1.205	.856	207	111	96	1.077	1.202	.933
Tile layers.....	334	262	72	1.215	1.283	.967	123	92	31	1.048	1.097	.902
Helpers.....	383	177	206	.528	.604	.463	110	49	61	.549	.671	.451
Truck drivers:												
Under 1½ tons.....	30	(¹)	28	.485		.484	25	24	(¹)	.470	.474	
1½ to 5 tons.....	225	41	184	.532	.675	.500	135	3	132	.467	.595	.464
Over 5 tons.....	13	(¹)	11	.757		.713						

¹ Less than 3 employees. Data included in totals. | been included in this particular analysis, but data
² Cities with a population under 50,000 have not | are included in the totals.

Wage rates paid in 25 of the selected occupations showed the same general trend with no marked deviation. These were bricklayers, carpenters, cement finishers and helpers, electricians and helpers, hoisting engineers, helpers not elsewhere classified, common laborers, wood lathers, mixer operators, painters, plasterers, plumbers and helpers, sheet-metal workers' helpers, steam fitters and helpers, stonemasons, structural-iron workers, tile layers and helpers, and the 3 classes of truck drivers. In the other selected occupations—hod carriers, metal lathers, rodmen, composition roofers, slate or tile roofers, and sheet-metal workers—the deviation from the established trend was not material, although a slightly higher rate was observed in cities of 500,000 to 1,000,000 than in cities over 1,000,000.

In a general way the rates for both union and nonunion workers conformed with the general trend, but it is significant that union rates in the smaller cities held more closely to the average rate paid in the larger cities than did nonunion rates. In cities with a population of from 50,000 to 100,000, for example, the average rate for nonunion workers was 28.2 percent below the average in cities with a population of over 1,000,000, but union rates in these cities were within 18.6 percent of the average for the larger cities.

Racial differentials.—Of the 186,145 workers included in the Bureau's survey, 21,894 (11.8 percent) were colored. Most of these were employed in semiskilled and unskilled occupations in the Southern States. Only 1.4 percent of the workers covered on skilled occupations were colored.

Of all colored employees, 6.9 percent were reported working on skilled jobs, 25.1 percent were on semiskilled jobs, and 68 percent were on unskilled jobs. Even where colored labor was more frequently employed, as in the South, only a small percentage were employed on skilled jobs. In the South Atlantic region where 14,524 skilled workers were reported, 618 or 4.3 percent were colored. In the East South Central region where 4,163 skilled workers were reported, 323 or 7.8 percent were colored. In the West South Central where 5,659 skilled workers were reported, 275 or 4.9 percent were colored.

The rates of negro workers in the building trades were substantially below those of white workers of the same skills in all parts of the country. (See table 6.) The greatest difference occurred in the rates of skilled workers. Compared with an average of \$1.156 an hour for skilled white workers, skilled colored workers averaged only 79.1 cents. Semiskilled colored employees received an average of 13.9 cents an hour less than white workers of the same class, and unskilled colored workers averaged 14.1 cents an hour less than unskilled white workers. Wage differentials between white and colored workers were found in all geographic divisions.

TABLE 6.—Average Hourly Wages of Negro and White Workers in Building Trades in 1936

Geographic division	Skilled		Semiskilled		Unskilled	
	White	Colored	White	Colored	White	Colored
United States.....	\$1. 156	\$0. 791	\$0. 714	\$0. 575	\$0. 572	\$0. 431
New England.....	1. 101	.....	. 630	. 615	. 608	. 468
Middle Atlantic.....	1. 229	1. 188	. 818	. 662	. 550	. 507
East North Central.....	1. 203	1. 101	. 773	. 768	. 628	. 569
West North Central.....	1. 103	. 706	. 604	(¹)	. 592	. 613
South Atlantic.....	1. 057	. 723	. 547	. 435	. 468	. 417
East South Central.....	. 957	. 734	. 473	. 451	. 357	. 331
West South Central.....	. 967	. 711	. 463	. 427	. 370	. 355

¹ The average hourly rate paid to colored semi-skilled workers in the West North Central region is distorted because of a preponderance of colored workers reported from St. Louis and Kansas City, Mo.

Type of construction and average hourly rates paid.—In round numbers, 59,000 workers, or slightly less than a third of all employees scheduled in this study, were engaged in residential building. Of this number, 56.7 percent were union members and 43.3 percent were nonunion men. In nonresidential construction 72.2 percent were union and 27.8 percent were nonunion employees.

The proportion of union and nonunion labor in residential construction varied by size of city, as follows: In cities of 250,000 and over—union employees, 62.4 percent and nonunion men, 37.6 percent; in cities under 250,000—union employees 41.5 percent and nonunion employees, 58.5 percent.

Full-Time Hours of Labor

The working time of 70.7 percent of the workers for whom information was obtained was 40 hours per week, 9.3 percent worked 30 hours a week, and 1.6 percent over 30 and under 40 hours; 10.4 percent worked 44 hours; 4.9 percent worked 48 hours, and only 2.6 percent worked over 48 hours per week. (Table 7.)

TABLE 7.—Distribution of Building-Trades Workers, by Weekly Hours in 1936 and by Geographic Divisions

Weekly hours worked	Percent working classified full-time weekly hours in—									
	United States	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
All employees.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
30 hours.....	9.3	5.5	11.4	6.8	11.8	3.0	1.0	9.2	10.0	20.5
Over 30 and under 36 hours.....	1.4	(¹)	1.0	.8	3.8	.5	.....	.1	19.3	1.2
36 and under 40 hours.....	.2	.....	.....	(¹)	.8	(¹)	.....	.5	.2	.5
40 hours.....	70.7	74.6	80.5	77.2	62.2	66.0	76.6	48.5	38.0	62.8
Over 40 and under 44 hours.....	(¹)	(¹)	(¹)	.1	(¹)	(¹)	(¹)	(¹)	.3	(¹)
44 hours.....	10.4	11.9	5.0	8.4	6.6	20.3	9.3	30.0	12.6	4.6
Over 44 and under 48 hours.....	.5	.3	.1	.9	.3	1.3	1.0	.8	.1	.1
48 hours.....	4.9	5.3	.6	3.3	13.7	1.8	5.5	9.3	17.2	9.9
Over 48 and under 54 hours.....	1.4	.2	.1	1.5	.6	5.6	2.8	.9	.3	.....
54 and under 60 hours.....	.8	2.2	.5	.9	.2	1.4	1.3	.2	1.7	.4
60 hours and over.....	.4	(¹)	.8	.1	(¹)	.1	2.5	.5	.3	.....

¹ Less than 1/10 of 1 percent.

In building construction, as in most other industries, there is a well-defined trend toward a shorter working week. This trend is especially noticeable in the West Coast cities. In Seattle, for example, the 6-hour day and 30-hour week had been standard for a year previous to this survey. Moreover, on February 15, 1937, employers and employees agreed to continue these hours another year at least. However, this trend is partly accounted for by the fact that, of the 19,876 employees reported working 30 to 36 hours per week, about half were working on projects financed by the Public Works Administration. On these projects work is limited by law to not more than 30 hours in any one week, and not more than 130 hours in any one month.

Regional differences in hours of labor.—In general, working time was longer in the South than in other parts of the country, but the geographical differences in hours of labor were much less marked than were the wage-rate differentials. The three southern regions (South Atlantic, East South Central, and West South Central), which employed less than a quarter of the workers covered by the survey, accounted for 48.9 percent of the employees who worked 44 hours a week. The same regions accounted for little more than a fifth of the employees who worked 48 hours a week or over. The average full-time hours worked per week by all employees in each of the geographical divisions in 1936 was as follows:

	Hours per week
United States.....	40.2
New England.....	40.1
Middle Atlantic.....	39.3
East North Central.....	40.2
West North Central.....	40.0
South Atlantic.....	41.5
West South Central.....	41.3
East South Central.....	41.7
Mountain.....	40.3
Pacific.....	38.9

The adoption of the 30-hour week is making some headway in all of the geographic divisions except the South Atlantic and the East South Central. The 9- and 10-hour day and the 54- and 60-hour week are definitely on the way out. Employees who worked such hours were largely unskilled colored laborers. The East South Central Division showed the largest group of employees working 54 hours a week or more.

Differentials by broad occupational groups and union membership status.—Skilled, union, building-trade workers do not, as a rule, work as long hours as nonunion men and less skilled workers. (Table 8.) Of all skilled employees studied, 82.2 percent worked 40 hours and under 44 hours per week, as compared with 36.2 percent of the skilled nonunion workers. Although 2.6 percent of the nonunion skilled

employees worked between 30 and 36 hours per week, 13.8 percent union skilled men fell in this group. Similarly, only 3.1 percent of the skilled union employees worked 44 and under 48 hours a week, while this was the working time of 37.5 percent of skilled nonunion men. Only 0.9 percent of the skilled union men worked 48 hours or more, as against 23.5 percent of the skilled nonunion workers. Much the same trend is shown for union and nonunion semiskilled and unskilled employees. Table 8 also shows that there is a wider spread between union and nonunion working hours in the South Atlantic and East South Central divisions than in other parts of the country.

TABLE 8.—*Distribution of Building-Trades Workers by Weekly Hours in 1936, and by Skill and Union Status*

[Percent working classified weekly full-time hours]

Hours of labor per full-time week	United States	Skilled			Semiskilled			Unskilled		
		Total	Union	Non-union	Total	Union	Non-union	Total	Union	Non-union
United States.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
36 hours.....	9.3	9.1	11.2	2.3	11.4	16.0	2.5	7.3	9.3	5.7
Over 30 and under 36 hours.....	1.4	2.1	2.6	.4	.7	.9	.4	.5	1.0	.1
36 and under 40 hours.....	.2	.1	.1	.2	.2	.2	.5	.2	.4	.1
40 hours.....	70.7	71.3	82.1	36.1	70.1	79.7	51.7	69.8	85.7	56.3
Over 40 and under 44 hours.....	(1)	(1)	(1)	.1	.1	.2	.1	-----	-----	-----
44 hours.....	10.3	10.8	3.1	35.4	8.7	2.0	21.5	10.9	2.2	18.4
Over 44 and under 48 hours.....	.5	.5	-----	2.0	.5	.1	1.3	.7	(1)	1.2
48 hours.....	4.9	4.1	.8	15.0	6.1	1.1	15.6	5.9	1.0	10.0
Over 48 and under 54 hours.....	1.4	1.2	(1)	5.2	.8	(1)	2.2	2.4	(1)	4.4
54 and under 60 hours.....	.9	.5	.1	2.0	1.3	(1)	3.8	1.3	.4	2.0
60 hours and over.....	.4	.3	-----	1.3	.1	-----	.4	1.0	-----	1.8

¹ Less than $\frac{1}{10}$ of 1 percent.

The 30-hour week is not uncommon in the Mountain and Pacific Divisions, but the short week is restricted almost exclusively to union workers. In the Mountain Division, 41.2 percent of the skilled union employees worked from 30 to 36 hours as against 1.7 percent of the nonunion skilled workers. In the Pacific Division, 28.9 percent of the skilled union men worked 30 to 36 hours a week compared with 4.3 percent of the skilled nonunion men. Of all union employees combined, in the Mountain Division 40.9 percent worked 30 to 36 hours per week, and in the Pacific Division 27.6 percent worked the shorter week. In the other divisions, percentages of union men working from 30 to 36 hours a week were:

	Percent		Percent
New England.....	7.2	South Atlantic.....	4.6
Middle Atlantic.....	14.9	East South Central.....	.1
East North Central.....	8.3	West South Central.....	14.7

Regular full-time hours per day.—In the building trades in 1936 the largest group of both union and nonunion employees worked 8 hours daily for 5 days a week. This was the regular working time of 82.2

percent of the union workers covered and of 46.8 percent of the non-union men. The working time of 14.1 percent of the union employees was 6 hours a day and 5 days a week, and 2.7 percent of the union men worked 8 hours a day from Monday to Friday and 4 hours on Saturday.

Aside from a large group working an 8-hour day and 5-day week schedule, the working time of nonunion employees varied widely. A considerable proportion, however, worked 8 hours a day from Monday to Friday and 4 hours on Saturday. Slightly more than 3 percent of the nonunion employees worked on a 30-hour week schedule.

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SEASONAL AGRICULTURAL LABOR IN THE YAKIMA VALLEY

By PAUL H. LANDIS, *State College of Washington*

THE fertile, irrigated area of the Yakima Valley lying in the south central section of the State of Washington is famous for its apples, but it also produces large quantities of other fruits, hops, and general farm crops. The intensive agriculture of the valley requires such a large supply of labor at certain seasons that in addition to the local supply, thousands of transients¹ enter the valley to work in the harvest of fruits and hops. It is estimated that some 500 to 1,000 full-time transient workers are needed during the harvest of cherries in June, 25,000 to 30,000 during the hop harvest of September, and 5,000 to 6,000 during the apple harvest in October. Because of time lost in transferring from one short job to another few workers are employed full time, and a surplus above these numbers is actually required if the crops are to be harvested without loss due to delays. During seasons of low demand for labor many of the residents are unemployed. In winter months only 500 to 1,000 agricultural workers are needed in the entire valley, yet in October of 1935 some 5,000 to 6,000 residents were employed in the apple harvest, indicating that there is a potential farm-labor group of 5,000 to 6,000 that must either be employed at nonagricultural tasks during the winter or be without employment.

Analysis of the employment and income experience of the workers² indicates that unemployment is a common experience of both the resident and transient worker and that most of the jobs on which they are engaged are very brief in duration. Farm workers reported very low earnings for the various jobs they had throughout the course of 1 year preceding the interview. Yearly cash earnings of about one-fourth of the workers were \$100 or less, almost half earned under \$200,

¹ A "resident" is considered to be one who had lived continuously in Yakima County for a period of 1 or more years preceding the interview (see footnote 2). Others are considered "transients."

² The nature of the study upon which this paper is based may be briefly described as follows:

31 sections in the irrigated area of the Yakima Valley located in Yakima County were selected as representative of the entire irrigated area, which is approximately 80 miles in length and 15 miles in width. Within these sections were 341 commercial farms, representing approximately $\frac{1}{10}$ of the total commercial farms in the irrigated area of Yakima County.

A schedule was used to obtain information on the nature of the agricultural enterprises on each farm. The cooperating farmer was interviewed with a worker's schedule at irregular periods varying from 2 weeks to 1 month throughout the course of 1 year.

On this schedule was recorded information concerning each worker who had been employed during the time since the preceding interview—the length of time he was employed, whether he worked on fruit or general crops, and so forth.

The study was begun on July 28, 1935, and followed through to July 25, 1936, thus providing a full 52-week period. It was financed by the Agricultural Experiment Station of the State College of Washington in cooperation with the Division of Social Research of the Federal Works Progress Administration, the Washington State Works Progress Administration, and the Washington State Department of Public Welfare.

The first publication on this project is Washington Agricultural Experiment Station, Bulletin No. 343: Farm Labor in the Yakima Valley, Washington. Pullman, Wash., 1936.

and one-fourth earned over \$400. Earnings of those on relief were only about half as great as of those not on relief. The combined cash earnings of family groups averaged \$342; those of the families on relief, \$269; and those of the families not on relief, \$466.

The valley is an area of comparatively small farms (table 1). Over 29 percent of the 341 farms studied contained 10 acres or less. Over 26 percent had 10 to 20 acres. The other 45 percent had larger acreages, but only about 9 percent had more than 60 acres, and none exceeded 200 acres. This tendency toward small acreages characterized both fruit and general farms, although a higher proportion of the fruit than of the general farms had small acreages.

TABLE 1.—*Distribution, by Type and Size, of 341 Farms in the Yakima Valley, Wash.*

Acres under crops	Total farms		Fruit farms		General farms	
	Number	Percent	Number	Percent	Number	Percent
Total farms.....	341	100.0	166	100.0	175	100.0
10 acres or less.....	100	29.3	54	32.5	46	26.3
10.1 to 20.0 acres.....	90	26.4	49	29.5	41	23.4
20.1 to 30.0 acres.....	47	13.8	24	14.5	23	13.1
30.1 to 40.0 acres.....	40	11.7	20	12.1	20	11.4
40.1 to 60.0 acres.....	34	10.0	11	6.6	23	13.1
60.1 to 80.0 acres.....	12	3.5	2	1.2	10	5.7
80.1 to 100.0 acres.....	11	3.2	5	3.0	6	3.6
100.1 to 120.0 acres.....	3	.9	1	.6	2	1.1
120.1 to 200.0 acres.....	4	1.2			4	2.3

Apples covered more land area than did any other fruit crop, and alfalfa covered a larger acreage than did any other general crop (table 2). As will be shown, fruit crops create most of the seasonal demand for labor. It will be observed that fruit crops covered 2,971 acres or 34.4 percent of the sample land area and general crops 5,646 acres or 65.6 percent. These percentage divisions no doubt represent fairly accurately the situation in the entire Yakima Valley as far as the division between these two types of crops is concerned. It is less likely that the subdivisions under fruit and general crops are always representative of the total area sampled by the study.

TABLE 2.—*Distribution of Land, by Crops,¹ on 341 Farms in the Yakima Valley, Wash.*

Crop	Acres		Crop	Acres	
	Number	Percent		Number	Percent
Total farms.....	8,617	100.0	General crops.....	5,646	65.6
Fruit.....	2,971	34.4	Alfalfa.....	2,605	30.2
Apples.....	1,776	20.6	Wheat.....	943	11.0
Pears.....	719	8.3	Corn.....	507	5.9
Peaches.....	190	2.2	Potatoes.....	331	3.8
Apricots and cherries.....	151	1.7	Oats.....	324	3.8
Prunes.....	85	1.0	Other hay.....	231	2.7
Grapes.....	50	.6	Barley.....	199	2.3
			Beets.....	84	1.0
			Miscellaneous.....	422	4.9

¹ The hop-growing area was not included in the sample, so is not listed here.

Hired laborers make up the largest proportion of the workers employed on farm crops in the Yakima Valley.³ Upon them depends the success of all farming enterprises which, like the fruit harvest, demand a large amount of hand labor.

A study of all labor employed on farms in the sample for the period of 1 year provided the summary of the weekly employment of hired labor⁴ on fruit and general crops presented in table 3. It may be observed that the employment of hired labor fluctuated greatly from week to week. At the peak, which came during the third week in October, 3,416 days of hired labor were used on the sample fruit farms. (There would be about 18 times as many in the entire valley, or about 61,488 days.) At the low point, which came during the third week in December, there were only 45 days of hired labor employed on fruit crops on the sample farms. (There would be about 18 times as many in the total valley, or 810 days.) The number of days of labor employed changes very suddenly at times on account of the nature of the fruit harvest. For instance, from the fourth week in October to the first week in November the number employed on fruit farms dropped from 2,870 to 211. This drop was much more abrupt than usual during the fall of 1935 because of a hard freeze, but even in normal years there is a rapid falling off after October 20.

During the period of 1 year, 34,880 days of labor were employed on fruit crops on the sample farms. This means that in the valley as a whole approximately 627,840 days of labor were so employed.

The situation for general crops is entirely different. Comparatively little labor is employed on general crops. At only one period of the year—from the third week in November to the first week in January—does the number of days of hired labor employed on general crops exceed that on fruit crops. General crops require much less hand labor than does fruit; the family can do a greater proportion of the work. Work on general crops is more evenly distributed throughout the year than on fruit crops, although much more labor is employed during spring, summer, and fall on general crops than during the winter. The peak period on the farms studied was the second week in August, when 383 days of hired labor were employed. This was the time when the small grains were harvested. A second peak of almost equal height occurred in the second week in June, when 370 days' labor were used. At that time the first and largest crop of hay was harvested. The labor on general crops in winter is concerned principally with the raising of livestock and with dairying:

The combined employment of hired labor on the fruit and general crops, including that which it was impossible to classify by crops, was

³ The study covered the labor of family and exchange workers, but space does not permit the inclusion of these data; 84.7 percent of all farm work on fruit and general crops on the sample farms,

except that of the operator, was done by hired laborers.

⁴ This summary in terms of "day's labor" assumes a 10-hour work day.

46,584 days for the year. Multiplying this figure by 18, one arrives at the estimate for the entire Yakima Valley of 838,512 days' hired labor for all fruit and general crops. This result does not take into account work in hop fields, which is discussed later.

TABLE 3.—Days of Labor Hired Each Week¹ on Fruit and General Crops on Sample Farms in Yakima Valley, 1935-36

Month	Days of hired labor employed				Month	Days of hired labor employed			
	Total	Fruit crops	General crops	Un-classified		Total	Fruit crops	General crops	Un-classified
Entire year, ending July 25, 1936.....	46,584	34,880	9,883	1,821	January 1936—Con.				
August 1935:					Fourth week.....	171	104	67	
First week.....	1,089	691	349	49	Fifth week.....	160	95	65	
Second week.....	1,270	846	383	41	February 1936:				
Third week.....	1,471	1,092	329	50	First week.....	225	156	63	6
Fourth week.....	1,623	1,368	209	46	Second week.....	179	110	63	6
Fifth week.....	1,479	1,201	230	48	Third week.....	234	158	70	6
September 1935:					Fourth week.....	283	207	70	6
First week.....	1,320	1,055	207	58	March 1936:				
Second week.....	1,348	1,056	229	63	First week.....	430	286	138	6
Third week.....	1,218	898	293	57	Second week.....	502	342	152	8
Fourth week.....	1,587	1,233	286	68	Third week.....	496	316	152	28
October 1935:					Fourth week.....	477	288	161	28
First week.....	2,629	2,237	315	77	April 1936:				
Second week.....	3,403	3,043	290	70	First week.....	521	360	136	25
Third week.....	3,692	3,416	236	40	Second week.....	509	328	249	22
Fourth week.....	3,248	2,870	336	42	Third week.....	539	325	191	23
Fifth week.....	1,069	836	217	16	Fourth week.....	448	266	163	19
November 1935:					Fifth week.....	536	319	180	37
First week.....	377	211	160	6	May 1936:				
Second week.....	272	144	119	9	First week.....	572	330	199	43
Third week.....	207	58	136	13	Second week.....	735	440	245	50
Fourth week.....	185	69	102	14	Third week.....	653	366	249	38
December 1935:					Fourth week.....	628	317	258	53
First week.....	168	61	91	16	June 1936:				
Second week.....	148	49	85	14	First week.....	790	468	268	54
Third week.....	150	45	91	14	Second week.....	1,396	967	370	59
Fourth week.....	153	48	91	14	Third week.....	1,394	1,000	334	60
January 1936:					Fourth week.....	1,559	1,241	239	79
First week.....	154	54	90	10	July 1936:				
Second week.....	185	127	58		First week.....	1,501	1,222	206	73
Third week.....	157	96	61		Second week.....	1,459	1,197	156	106
					Third week.....	874	611	185	78
					Fourth week.....	591	257	261	73

¹ The study began July 28, 1935. The remaining days in July were included in the first week in August. The first week listed in the table, therefore, ran from July 28 through August 3. Throughout

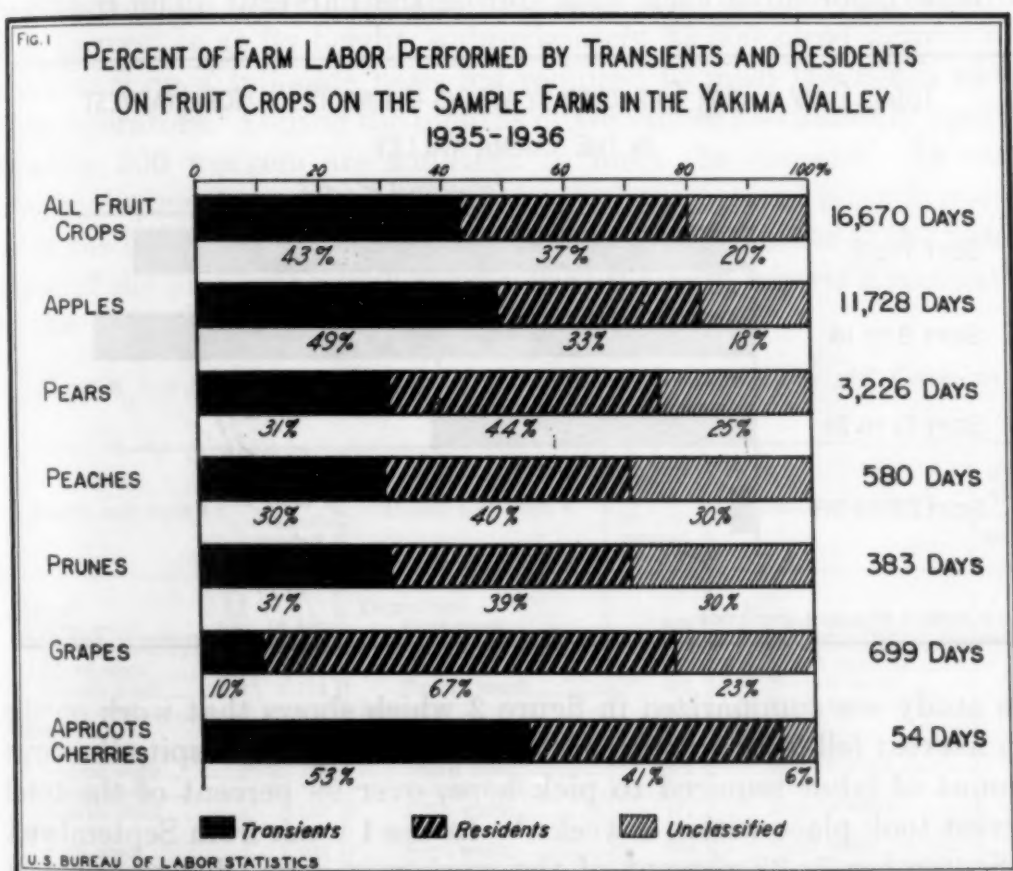
the remainder of the series where a week overlapped 2 months it was included in the month in which the largest number of days fell.

During the course of the year more than twice as many days of resident as of transient labor are employed (26,332 days compared to 10,812 days).⁵ A total of 9,440 days' labor could not be classified by residential status of the worker. The most obvious difference in the employment of transient and resident labor on the sample farms was the tendency for a relatively higher number of residents to be employed throughout the course of the year. The range for transients was from 12 days the first week in February to 1,623 days the third week in October. The range for residents was from 123 days during the third week in January to 1,433 days the third week in October.

⁵ Tabular data have been omitted because of space limitations.

It is significant that during most of the year less work was done by transients, residents, and unclassified groups combined than was done by residents alone during October. This fact suggests that during most weeks of the year residents could have handled all the farm work. This statement cannot be accepted as final, for it may be that many residents who work in the apple harvest of October would not be available for work at other seasons, or would not be competent to do other farm work. On the other hand, one cannot be sure that even during the peak weeks of October all employable resident farm workers were employed.

An analysis of the proportion of labor performed by resident and by transient workers on fruit crops appears in figure 1. The exact per-



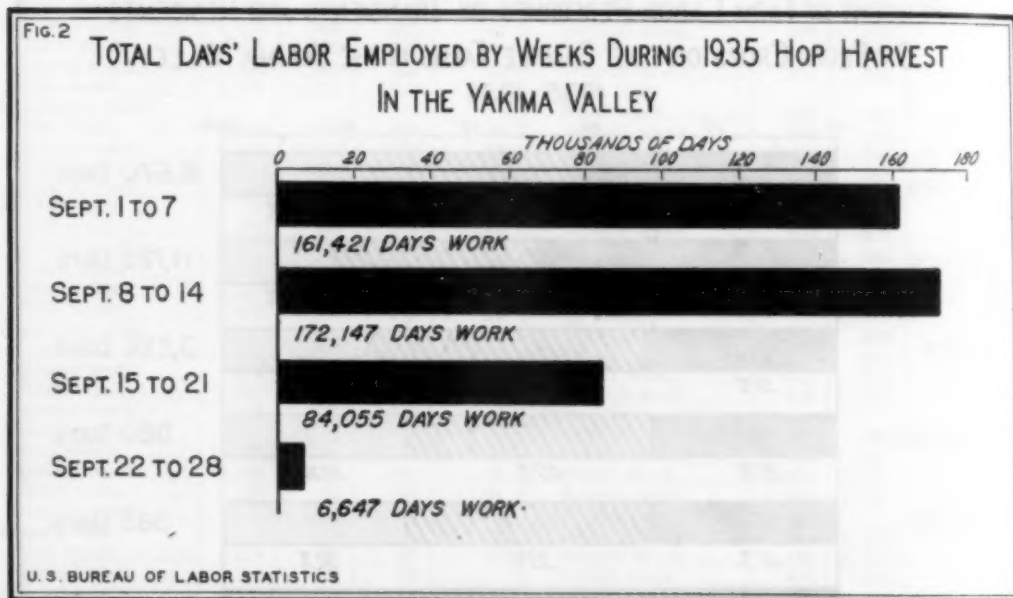
centages have comparatively little significance since it is impossible to decide just how the unclassified labor should be divided. It seems probable that a disproportionately large part should go in the transient classification, since the farmers reporting would more likely have known the residential status of one who lived in the community than of the transients. It is conservative to assume that at least 50 percent of all the work on fruit crops is done by transients. It may be that as much as 65 percent is done by transients. Figure 1 indicates in a general way the relative amount of work done by transients on the various fruit crops. The highest percentage of work by transients

was performed on apricots and cherries and the next highest on apples. The smallest relative amount was performed on grapes.

General crops present quite a different picture because they employ relatively few transients. A summary of the data shows⁶ that of 9,885 days' labor on general crops 74.8 percent was by residents, 17.2 percent by transients, and 8.0 percent was unclassified.

No systematic study of the employment of hired labor on hop farms week by week, comparable to that for fruit and general crops outlined in the preceding pages, has been made. There were, however, in the Yakima Valley in 1935 some 5,500 acres of hops.

Forty of the leading hop growers in the valley were interviewed after the 1935 harvest and information was obtained on the number of days' labor hired each week during the harvest.⁷ The results of



this study are summarized in figure 2 which shows that work on the hop harvest fell in the month of September and that, despite the large amount of labor required to pick hops, over 98 percent of the total harvest took place within 3 weeks.⁸ In the 1 week from September 1 to September 7, 38 percent of the work was done, during the next week 40.6 percent, during the third week 19.8 percent, and during the fourth week the remaining 1.6 percent. The short season for picking hops and the large amount of hand labor required result in a large weekly demand for labor. These factors make hops probably the most important crop in the Yakima Valley from the standpoint of

⁶ Tabular and graphic materials are omitted here.

⁷ Only about 3,500 acres of the total hop acreage were harvested during 1935 because of low prices and red-spider damage. This means that the harvest labor should be distributed among this number of acres rather than the full 5,500 acres that were planted. The 1936 acreage harvested was even less, but the prospects are that 1937 will see a much larger harvest because of more attractive prices.

⁸ Harvesting was begun in most fields on September 2, as the first day of the month fell on Sunday. Few hops were picked in August because employers did not wish to start their drying ovens just before a week end. During some seasons the harvest gets well under way during the last week in August.

seasonal labor. It is, in addition, probably the most important crop from the standpoint of transient labor, because a large proportion of the hop picking is done by transients.⁹

An estimate of the amount of nonharvest labor used on the hop crop was furnished by the secretary for Lloyd Hughes & Co., the largest growers of hops in the State of Washington. According to his week-by-week estimates of employment of laborers in cultivating, pruning, twining, and training hops in the Yakima Valley, this labor amounted to 165,000 days during 1935.¹⁰

This completion of the labor picture permits the making of an estimate (table 4) of the total amount of hired labor required for all farm work in the Yakima Valley during each season of the year. The results indicate that during the second week in September, when the hop harvest is at its height, approximately 33,000 hired agricultural workers¹¹ on a full-time basis are required to meet the needs of the farm operators. During the months of December and January approximately 500 workers are sufficient to meet the demand. In other words, during the peak season 66 times as much hired labor is needed as at the low point. This extreme variation in demand is at the base of most of the problems which characterize the farm laborer's occupation in the Yakima area.

TABLE 4.—*Estimated¹ Number of Hired Workers Needed for All Crops in Irrigated Section of Yakima County, by Weeks*

Month and week ²	Full-time workers needed	Month and week ²	Full-time workers needed	Month and week ²	Full-time workers needed
August:		December:		April:	
First week.....	3,515	First week.....	503	First week.....	2,538
Second week.....	4,060	Second week.....	445	Second week.....	3,047
Third week.....	4,963	Third week.....	452	Third week.....	2,864
Fourth week.....	5,119	Fourth week.....	459	Fourth week.....	2,343
Fifth week.....	4,686	January:		Fifth week.....	2,608
September:		First week.....	462	May:	
First week.....	30,865	Second week.....	555	First week.....	3,964
Second week.....	32,737	Third week.....	471	Second week.....	5,255
Third week.....	17,753	Fourth week.....	514	Third week.....	5,209
Fourth week.....	5,867	Fifth week.....	477	Fourth week.....	4,134
October:		February:		June:	
First week.....	7,888	First week.....	676	First week.....	4,619
Second week.....	10,210	Second week.....	537	Second week.....	6,436
Third week.....	11,076	Third week.....	701	Third week.....	5,935
Fourth week.....	9,743	Fourth week.....	848	Fourth week.....	5,925
Fifth week.....	3,207	March:		July:	
November:		First week.....	1,290	First week.....	5,501
First week.....	1,129	Second week.....	1,508	Second week.....	4,626
Second week.....	815	Third week.....	1,486	Third week.....	2,874
Third week.....	618	Fourth week.....	1,429	Fourth week.....	2,022
Fourth week.....	555				

¹ These estimates are based on the assumption that each worker will be employed a full 60 hours a week (6 days at 10 hours per day).

² These weeks are based on the calendar years 1935-36. See footnote, table 3.

⁹ Schedules obtained from interviewing a sample of 100 hop pickers indicated that 87 percent of those interviewed were transients. The sample was, however, biased, as interviews were made at the camps in the evening after work. Those workers residing near by would have been living at home and would not, therefore, have been interviewed.

¹⁰ This information has been obtained since Washington Agricultural Experiment Station Bulletin No. 343 went to press. This explains the difference between table 4 of this article and table 8 in the bulletin.

¹¹ Includes women and children who are employed extensively in the hop harvest.

As nearly as can be estimated, during the peak of the apple-picking season of 1935¹² between 5,000 and 6,000 resident laborers were employed,¹³ indicating that at least that many resident farm laborers were available then. There is no information indicating whether they are available the year round, and it is not known whether all employable resident farm laborers were used in the apple harvest.

It is probably safe to assume, however, that somewhere between 4,000 and 6,000 resident farm laborers live in the Yakima Valley. If this estimate is approximately correct, transient laborers are needed only during the months of September and October when the hop and apple harvest are in progress (a possible exception to this is that 500 to 1,000 transients might be needed during June). Under present conditions more than 25,000 transients are needed during the first 2 weeks in September and over 10,000 during the third week. During the first 3 weeks in October some 5,000 are needed.

All these estimates assume that each worker will be employed full time. Because of time lost by workers, a considerably larger number is actually needed, under present placement conditions, to protect the interests of the farmer.

Table 4 also suggests that if there are even as many as 3,000 resident farm laborers in the Yakima Valley who have no other regular occupation—and there are probably more than this number—during November, December, January, and February five-sixths of them can expect no agricultural employment, and during March more than one-half of them can expect no employment on farms.

These estimates, or in fact any estimates that could be made, are in the nature of approximations and should be accepted only with the following considerations in mind: (1) They are based on the 1935-36 season's experience. Changes in acreage of the various crops will affect the labor situation. (2) The estimates assume a 10-hour work day; a shift to an 8-hour day would make necessary the employment of a greater number of laborers. (3) Weekly estimates assume the full-time continuous employment of all workers present in the valley at the given period, but of course such a condition never exists. It is difficult to estimate the surplus numbers necessary to protect the crop. Perhaps a surplus of as many as one-fourth to one-third of the resident labor group are needed under present placement conditions.¹⁴ (4) Estimates assume the continuation of child labor on its present scale.

¹² It seems very probable that the number of resident workers may have been considerably in excess of 6,000, as this method of estimating assumes that all workers are employed full time during the peak of the apple-picking season; also, some of the "unclassified" group no doubt were residents.

¹³ It may be that more residents are employed during the hop harvest, but no reliable data on residen-

tial status of the hop pickers were obtained, so there is no sound basis for estimating the number of residents employed. In any case, the work of children would complicate estimates based on the hop harvest.

¹⁴ Most workers now obtain jobs by making inquiries from farm to farm. (See Bull. No. 343 *op. cit.*, pp. 45-47.)

Legislative changes reducing child labor would affect the situation, as fewer workers could do the work if all were adults.

In spite of these weaknesses, however, the estimates do represent a workable approach to the problem.

The significant question, from the standpoint of the agricultural laborer, is the effect of seasonal demand upon his employment and income. Steady work and certain income are of prime importance, as a guaranty of security.

A brief summary of data concerning the employment and income of agricultural laborers in the Yakima Valley will indicate that perhaps no common laborer is farther removed from security than the seasonal farm worker.¹⁵

Let us consider this problem from two standpoints: (1) The length of agricultural jobs on which workers are employed in the Yakima Valley, and (2) earnings of the worker throughout a year on all jobs.

The number of jobs of short duration on both fruit and general crops greatly exceeds those of longer duration. The greatest number of jobs on fruit farms last only 3 to 6 days, the next greatest number from 1 to 3 days, and a considerable number only 1 day. The greatest number of jobs on general crops last only 1 to 3 days.

A large proportion of jobs on general crops last only 1 day. The wheat and the oat harvests account for many of the 1-day jobs on general farms, for acreages are small and usually grain can be shocked in 1 day. Haying accounts for a large number of the 1- to 3-day jobs on the general farm crops. As to the jobs on fruit crops, it is probable that fruit picking accounts for a large proportion of those of less than 3 weeks' duration.

The percentage distribution of jobs by duration presents a more striking summary picture. Over 70 percent of the total number of jobs on the farms studied lasted only 1 week or less, and 27.2 percent from 1 to 6 weeks. Only 1.3 percent of the jobs covered a period of 6 to 12 weeks, and only 1.2 percent covered a period of 12 or more weeks.

Several differences appear when the lengths of employment on fruit farms and on general farms are compared. On fruit farms 67.2 percent and on general farms 81 percent of the jobs were 1 week or less in duration. Over 30 percent of jobs on fruit farms and 15.6 percent on general farms lasted from 1 to 6 weeks. The other outstanding difference was that 1.0 percent of jobs on fruit farms were over 12 weeks in length as compared to 2.2 percent on general farms.

¹⁵ This is especially significant when one considers the fact that the Social Security Act of 1935 does not cover farm workers.

The employment situation in agriculture affects directly the income of the farm laborer. A distribution ¹⁶ of the annual cash income ¹⁷ of farm laborers (table 5) indicates that 22.8 percent earn \$100 or less and that almost half (47 percent) earn under \$200 per year. Only one-fourth receive more than \$400 per year.

The distribution also distinguishes between those who received relief during the year and those who received no relief. This comparison presents some rather striking contrasts. Eighty-nine percent of the relief group were in income groups with less than \$400, whereas of the nonrelief group only 57 percent were in these groups.

TABLE 5.—*Distribution of 456 Relief and Nonrelief Farm Laborers in the Yakima Valley, 1935-36, by Income Classes* ¹

Income class	Total		Laborers in receipt of relief		Laborers not in receipt of relief	
	Number	Percent	Number	Percent	Number	Percent
All income classes.....	456	100.0	251	100.0	205	100.0
Under \$100.....	104	22.8	68	27.1	36	17.5
\$100 and under \$200.....	111	24.3	84	33.5	27	13.2
\$200 and under \$300.....	71	15.6	46	18.3	25	12.2
\$300 and under \$400.....	55	12.1	26	10.3	29	14.1
\$400 and under \$500.....	41	9.0	12	4.8	29	14.1
\$500 and under \$600.....	32	7.0	12	4.8	20	9.8
\$600 and under \$700.....	13	2.9	2	.8	11	5.4
\$700 and under \$800.....	13	2.9	1	.4	12	5.9
\$800 and under \$900.....	5	1.1	—	—	5	2.4
\$900 and under \$1,000.....	2	.4	—	—	2	1.0
\$1,000 and under \$1,100.....	2	.4	—	—	2	1.0
\$1,100 and under \$1,200.....	2	.4	—	—	2	1.0
\$1,200 and over.....	5	1.1	—	—	5	2.4

¹ I. e., cash income of head of household during year preceding interview.

A further analysis of the annual cash income of resident and transient single persons and family heads (table 6) presents more specific comparisons. It will be observed that the average cash income of all workers who received relief was approximately \$200, whereas that of those who did not receive relief was nearly \$400. The highest-paid group was that of heads of resident families, who had an average cash income of approximately \$460. The lowest cash income was found

¹⁶ Based on case records obtained by interview with 456 farm laborers. The original sample included 468 cases, but 12 cases are omitted in this analysis of annual income because the subjects farmed a part of the year in the drought area or elsewhere, making it difficult to determine in any accurate manner their total annual cash income.

This analysis has been carried farther than in Washington Agricultural Experiment Station Bulletin No. 343 (pp. 54-56). As will be observed, the differences in the income of residents and of transients found there are to be explained entirely by the presence of a larger proportion of relief cases in the resident sample. The analysis made since that bulletin went to press demonstrates this fact beyond a doubt. This latter analysis is presented herein.

¹⁷ Cash income does not take into account income received from work relief, the Works Progress Ad-

ministration, or, in fact, from any form of relief. It should also be kept in mind that none of the comparisons presented herein take into account perquisites, even though it is generally known that while the worker is engaged in agricultural pursuits in the Yakima Valley he frequently receives perquisites in the way of shelter, free camping space, and in a few cases even board and room. It is difficult to arrive at a fair evaluation of these various perquisites and therefore the comparisons have been made entirely in terms of the cash income of the farm workers. The cash-income data do include earnings from all the different types of jobs in which the worker is engaged throughout the year preceding the interview, regardless of the location of these jobs. An analysis of these various jobs indicates that farm workers engage in a very great variety of pursuits aside from agricultural work.

among the transient single workers who received relief, their cash income having been approximately \$163. The average income of the whole farm-labor group was \$285.03.

TABLE 6.—Average Cash Income of 456 Relief and Nonrelief Transient and Resident Family Heads and Single Workers in the Yakima Valley in 1935-36

Class of worker	Laborers in receipt of relief		Laborers not in receipt of relief	
	Number	Average income	Number	Average income
All workers.....	251	\$199. 11	205	\$390. 24
Family heads.....	209	205. 32	124	397. 77
Transients.....	84	201. 51	90	374. 26
Residents.....	125	207. 88	34	459. 98
Single workers.....	42	168. 22	81	378. 71
Transients.....	20	162. 72	53	345. 53
Residents.....	22	173. 22	28	441. 53

In the case of the workers with families, the cash income of the combined household is a more significant index of economic status than the cash income of the head alone. It will be observed (table 7) that the combined cash income of relief families averaged \$269.24 and of nonrelief families \$465.77. The highest-paid group was the resident nonrelief family group which averaged \$572.99 cash income during the year, and the lowest-paid was the resident family on relief, with \$264.60. The combined family income of all the 333 family households averaged \$342.42.

TABLE 7.—Average Cash Income of 333 Relief and Nonrelief Households in the Yakima Valley, 1935-36

Class of family	Households in receipt of relief		Households not in receipt of relief	
	Number	Average income	Number	Average income
All families.....	209	\$269. 24	124	\$465. 77
Transient family.....	84	276. 15	90	425. 26
Resident family.....	125	264. 60	34	572. 99

All the data on income were obtained in personal interviews with the workers by the use of a schedule calling for information on all jobs held during the year, the rate of pay, and the total earnings. Any data collected by the interview-schedule technique are, by their very nature, subject to a degree of error, so the above representations of earnings should be considered approximations only. Further, they represent earnings during the 1935-36 period, when wage levels were somewhat lower than they are at the present time. But even if the situation is given the most optimistic interpretation possible, it is clear that the income of the farm laborer in the Yakima Valley is precariously low if one is to expect the farm laborer to be self-sufficient economically.

COOPERATIVE ACTIVITIES OF A GROUP OF APARTMENT-HOUSE RESIDENTS

By VAL LORWIN, *of the Consumers' Project*

ONE city apartment building may house the population of a small town, but the several hundred families in it may go their separate ways, unknown to each other and with no other bond than a common address and the same landlord. On the other hand these families may undertake to fill some of their own needs by pooling their buying power. From a multitude of unrelated groups of people, they may build a cooperative community.

What the residents of the Carl Mackley apartment houses in Philadelphia have done to make their common dwelling place a cooperative community is told here. The Mackley houses are in the section of Philadelphia known as Frankford. They are 3-story buildings of terra-cotta brick, separated by ample courtyards, open to sunlight and air. Only a third of the ground space is covered by the low buildings.

Aided by a Government loan of a million dollars, the Mackley houses were project no. 1 of the Housing Division of the Public Works Administration. They were sponsored by the American Federation of Hosiery Workers. Tenants began moving in at the beginning of 1935 but the apartments were not fully occupied till October of that year.

Apartments range in size from two rooms with kitchenette and bathroom to five rooms, which include large kitchen, bath, and showers. Rents range from \$27.50 a month to \$50.50 for the largest apartments, averaging \$9.60 a room. Rent includes heat, light, and electricity for cooking. Every apartment has cross-ventilation.

The greatest Mackley attractions are the swimming pool and nursery. Users of each pay a nominal charge. On the roofs are laundry rooms, with electric washers and driers; their use is free and time is allocated by the tenants' laundry committee.

Hosiery workers comprise one-third of the tenants. Another third is employed in other Philadelphia industries, manufacturing radios, textiles, etc. The remaining tenants are clerical workers, professional people, such as teachers and government employees, and small business people. Practically all are American-born, though their national origins go back to 27 European countries. Family incomes range from \$1,200 to \$2,200 a year, with \$1,800 a common figure.

Many of these people thought they could increase the purchasing power of their incomes by pooling their food purchases, and could

meet their need for credit if they pooled their savings and lent money to themselves.

The first cooperative venture of the tenants was a credit union. A Federal charter was obtained by 11 residents in November 1935. They began with a capital of \$28. By the end of March 1937, the credit union had 200 members, \$5,496 in share capital, and \$5,307 in loans outstanding.

Loans go chiefly to enable members to buy merchandise—refrigerators, cars, clothes—at cash prices instead of on the installment plan; to liquidate previous commercial loans made at higher interest rates; to pay doctor bills. The loans made from the time of organization of the credit union totaled almost \$14,000 by March 1937. Living in the same community, the members know each other well, and not a cent has yet been written off in bad debts.

A dividend of 4 percent was declared for the year 1936, when interest of 1 percent per month on unpaid balances was charged. The rate was then lowered to three-fourths of 1 percent per month.

Every Friday evening, in the auditorium of the Mackley Houses, the credit union is open for business. Formerly, on Fridays, while the credit union was receiving savings and repayments and taking applications for loans, the sale of fruits and vegetables and groceries was going on in another part of the auditorium.

Modestly, with a pooled order for one crate of oranges at wholesale, and a discussion group on cooperation, the buying club had begun, in January 1936. Once a week on Friday nights, at first in one of the apartments, then in the auditorium, the orders were delivered—fresh fruits and vegetables, canned goods, drugs, soaps, tea, and coffee. A volunteer committee would set forth at 4 o'clock in the morning to get the fruits and vegetables at wholesale. Where possible, groceries were bought from a cooperative wholesale. Attempt was also made to procure goods produced under fair labor conditions.

Capital for the buying club came from "temporary shares" at \$2 each. At the end of a year of operation 102 of these were outstanding. For a brief period dues of \$1.20 a year, or 10 cents a month, were collected, but this practice was soon discontinued. With savings on purchases, there was soon enough capital to accumulate a stock of staples in advance of orders. Trade was so brisk that even perishable goods could be profitably bought without previous commitments.

For the last 6 months of cooperative buying activity, with sales at prevailing prices or under, the club did a business of \$3,000. It returned to members, in proportion to their purchases, 5 percent as patronage refunds. Nonmembers automatically received 2½ percent, to be applied toward the purchase of shares.

By the end of 1936 the club was ready to take over the private grocery already in existence in the buildings. Said an editorial in the

first number of the weekly cooperative news sheet: "Carl Mackley residents are spending at least \$10,000 per month for food. If we will all determine to concentrate all of this great purchasing power in a business owned by ourselves that will pay back the profit to us, its customers, in proportion to our patronage * * * we will be able to buy, with these rebated profits, goods which we could not otherwise afford, thereby improving our own standard of living and stimulating employment."

For this purpose the Juniata Consumers' Cooperative Association was incorporated. Shares were sold at \$10 each. When a share has been half paid for, a member has full voting rights, and he is credited on the books with a full percentage (instead of half) on his patronage refunds until his share of stock is entirely paid for. When, on March 5, the grocery reopened as a cooperative store, \$700 in capital was subscribed, four-fifths of which was paid in. It is the only cooperative store open full time in Philadelphia.

Stock and fixtures of the existing store were purchased, partly for cash and partly in notes of the cooperative. The original store's membership in a large voluntary chain has been maintained to take advantage of volume purchasing power in goods which cannot be obtained from cooperative sources. The cooperative observes the stipulation of the voluntary chain that its brands shall be sold at the prices which it establishes.

The grocery's two experienced clerks, members of the retail clerks' union, continued in the store. They had discussed principles of cooperation with the members, and were in accord with the idea.

In the first week of operation as a cooperative enterprise the store increased its business from \$450 to \$629. Since then business has gained rather steadily, and now exceeds \$750 a week.

The cooperative has established an appreciable demand for many cooperatively produced and processed goods—canned foods, preserves, cosmetics, coffee, etc. High quality of meats has helped to hold trade. Lower prices on some advertised brands can undoubtedly be had at a gigantic market about seven blocks away, near the "L" station. This market keeps the cooperators on their toes as merchandisers. For many advertised brands on which its prices do not meet those of its competitors, the store offers instead cooperative brands said to be "comparable and less expensive." The "co-op" sells no loss leaders, but stresses cooperative products, known quality, the democratic function of its enterprise, and fair labor conditions.

The cooperative association also operates a parking lot. The building includes garages for only 80 of the 180 resident families having cars. When police began to ticket cars parked on the street all night, car owners became cooperators. One of the vacant lots opposite the houses was leased for a small sum. It was graveled, lights were put

up, and a watchman hired. At various times as many as 45 car owners have used the lot. Charges have been those necessary to cover expenses. They are now \$1.75 a month (as compared with \$5.00 a month for the use of garages in the buildings).

A W. P. A. workers' education teacher, with accounting experience and an informed interest in the cooperative movement, has conducted a class in cooperative accounting and helped install a practical method of keeping the books of the cooperative association. Another W. P. A. teacher leads a weekly afternoon discussion group for women on such consumer problems as budgeting, buying, food preparation, etc. The cooperative association publishes a one-page news sheet each week, which combines announcement of some of the week's prices with an editorial or two. This is distributed free to all tenants.

Through the cooperative, about 40 families buy milk from a private distributor at a discount. Plans are going forward to set up a city-wide milk cooperative, which will buy all its products directly from a farmers' cooperative which has just built its own pasteurizing plant.

While the cooperators are still most concerned about bringing into their ranks a large number of Mackley residents, they are also proposing to make the "co-op" known to their neighbors, through unions, churches, forums, and literature and personal visits. The Women's Cooperative Guild already has members who live outside the Mackley apartments. The dozen or so active women of the guild do not restrict their activities and devotion to "selling co-op", though that is always on their agenda, or even to brightening the cooperative association's meeting with skits and dances and refreshments, though they are successful at that. The guild women work in terms of the community. They have raised money for the nursery. They have seen to it that the store donated orange juice and tomato juice for the nursery's youngsters. They arranged for a doctor to come to the Mackley Houses to inoculate children against scarlet fever.

These are some of the activities which residents in the Carl Mackley Houses have undertaken in common. Of course, the Mackley Houses are not ordinary buildings. Named after young Carl Mackley, a member of the hosiery workers' union killed in a strike in 1931, the apartments are an attempt by the union to provide the basis for a better level of living for its members and for other workers. Mackley represents not only low-cost modern housing; it is a community; and its simple, modern lay-out, its open spaces, its nursery and laundries and craft room and swimming pool and auditorium, are the visible expression of that striving toward community achievement. The cooperatives, in more ways than the saving effected by their members and patrons, are an important part of the community.

Productivity of Labor and Industry

MECHANICAL CHANGES IN THE COTTON-TEXTILE INDUSTRY, 1910 TO 1936¹

By BORIS STERN, *Bureau of Labor Statistics*

THE EFFECT of improved machinery and equipment on labor productivity in the cotton-textile industry, though long a matter of interest, has never been accurately determined. This article attempts to measure the changes in output per man-hour which were made possible between 1910 and 1936 by improvements in machinery and equipment.

The changes in output that developments of machinery alone make possible between two dates can never be studied directly from mill records. It might well be that no mill could have been found in either 1910 or 1936 producing a given type of cloth and having the latest equipment in every department. Mills do not as a rule install improved machinery as soon as it is introduced but wait until the new machinery has proved to be of value in actual practice, until the old machinery wears out, until it appears economical to replace it, or until sufficient funds are available for new capital expenditure.

Even if two mills were found that met the basic requirement of the study—one operating under conditions of 1910 and the other operating under conditions of 1936 and each equipped with the best machinery available at that time—differences in the recorded output per man-hour could not be attributed to machine development alone. Labor productivity is affected by a variety of factors—the size of the plant and its location, the type and condition of machinery used, the nature and variety of the product manufactured, management, the type of labor available, the working conditions within the plant, and other factors. Changes in any one of these may have a decided influence on the mills' output per man per hour. The influence of any single factor or group of factors may be neutralized by simultaneous changes in other factors, or may be greatly enhanced.

¹ Summary of a study of labor productivity in the textile industry, undertaken by the Bureau of Labor Statistics in cooperation with the National Research Project of the W. P. A. The data on changes in machinery and the labor requirements presented in

the report were prepared in collaboration with the Barnes Textile Associates, Inc., a leading textile engineering organization with headquarters in Boston, Mass.

Faced with the problem of measuring the effect of one variable among many on the output, per man-hour, of a given cotton cloth, the investigator might conceivably make either a statistical analysis or an engineering analysis. A statistical investigation presupposes records from so large a number of mills approximating the desired standard of equipment in each period that differences in management, labor efficiency, or any other uncontrolled variable would be canceled out. The number of such mills is not large enough to allow a statistical approach to the problem.

The alternative approach is an engineering study. This article summarizes such a study. Composite mill records have been built from actual records of performance of separate departments in many mills. It is true that the record is a hypothetical one. The estimates probably cannot be checked against those of any operating mill because a mill with absolutely modern equipment in every department may not exist. But equipment which an engineer would recommend as most efficient, if he were designing a mill to be built, can be found in operation in many mills. He would build up his estimate of labor requirements for this composite mill out of data obtained by a study of the various departments of many separate textile mills producing the various kinds of cloth—carded broadcloth, combed broadcloth, sheeting, carded-filling sateen, canton flannel, print, lawn, and terry toweling—and using the kinds of machinery he recommends.

In such a study certain assumptions must be made. Those made in this study with reference to the group of composite mill records (which we shall refer to as mills) are:

That each mill was engaged in the manufacture of one and the same type of cloth in 1910 and 1936 and that it produced an approximately equal quantity of finished goods in both periods.

That each mill was equipped with the best machinery available at that time. This machinery is assumed to have operated at the machine speeds prevailing in the respective periods. Only such machines and equipment as have been proved practical and economical are included.

That the machinery in both periods was adequately housed in buildings designed to meet the requirements of each mill, and that the mills were provided with such lighting and heating facilities as would be considered good engineering in the respective periods.

That the type of labor available remained constant, and working hours unchanged, throughout both periods. Both groups of mills are assumed to have operated on two 40-hour shifts a week. For each mill and for each period, the output of all so-called processing departments (such as yarn dyeing, bleaching, piece dyeing, printing, napping) and all office and managerial functions, have been excluded.

That there was "good management" in both periods. Management is an important factor in the output of a plant. It is often as

important as and sometimes even more important than good technology. For the purpose of this survey, however, the variations in man-hour output due to the variations in managerial technique are ignored.

The element of wage rates has also been eliminated from the analysis. During the period 1910-36 there was a tendency to relieve skilled workers of duties and functions which could be effectively performed by unskilled hands, with the result that the proportion of skilled to unskilled operators was considerably reduced, with corresponding reductions in pay rolls. Nevertheless, for the purpose of this survey it was deemed advisable to exclude the wage factor and to combine all employee hours regardless of the skill required and the wages paid.

The objectives of the study may be briefly stated as follows:

(a) To determine the number of man-hours required in 1910 and in 1936 to produce a given yardage of goods with the best machinery and equipment available in each period.

(b) To ascertain the changes in the number of workers needed to operate these mills.

(c) To measure the changes in the output per man per hour which became possible during the quarter century between 1910 and 1936 through improvements in machinery and equipment alone.

A study might be planned with a different objective; for example, to measure actual changes in output per man-hour from 1910 to 1936. For such a measurement the approach used in the present article would not be applicable. Such changes, which are resultant of many diverse factors, can be studied only from operating records. The Bureau has attempted such a study as well, which will show what certain mill managements *have done*. The present study shows *the best that could have been done* in 1910 as compared with *the best that could be done in 1936*, allowing only for differences in the efficiency of available machinery. In effect these are "ceiling" figures, below which operating results with less completely modern equipment ranged, but toward which average performance would tend to be lifted through the installation of new equipment.

Summary

The utilization of the most advanced cotton-textile machinery on the market in 1936, as compared with the most advanced machinery on the market in 1910, would have made possible considerable increases in the man-hour output of all the eight cotton-textile products studied. Stated in another way, the same amount of product could have been produced with considerably fewer man-hours in 1936 than in 1910.

The greatest increase in man-hour output of finished grey cloth thus made possible was in the case of terry cloth, this increase amounting to 151.8 percent. Production of lawn cloth showed the next greatest increase, amounting to 90.2 percent. The possible labor-time reduction in the terry-cloth mill was 59.9 percent and in that producing lawn 46.5 percent. (See table 1.)

TABLE 1.—*Productivity and Labor Requirements in Manufacture of Cotton Textiles, 1910 and 1936*

Mill producing—	Man-hour output of finished product (grey cloth)					Labor-time requirements for identical quantity of output			
	1910		1936		Percent of increase	Output (yards of grey cloth)	Man-hours required for two 40-hour shifts		
	Pounds	Yards	Pounds	Yards			1910	1936	Percent of decrease
Carded broadcloth.....	3.26	16.30	4.88	24.40	49.69	437,890	26,880	17,960	33.18
Combed broadcloth.....	2.65	10.60	4.26	17.04	60.75	295,828	27,880	17,360	37.73
Sheeting.....	3.95	15.80	6.14	24.56	55.44	541,496	34,200	22,040	35.56
Carded-filling sateen.....	2.76	13.14	4.05	19.28	46.74	343,742	26,120	17,840	31.70
Canton flannel.....	7.25	13.55	11.47	21.44	58.21	559,149	41,280	26,080	36.82
Print cloth.....	3.05	12.20	4.62	18.48	51.50	307,000	25,200	16,600	34.10
Lawns.....	.92	8.28	1.75	15.75	90.20	220,000	26,680	14,000	47.50
Terry cloth.....	2.84	10.79	7.15	27.17	151.80	² 701,680 ₁ 712,480	75,400	30,240	59.90

¹ Data for 1935.

² 1910.

The exceptionally large increases possible in the output per man-hour in the mills producing terry cloth and lawns with the most modern equipment in 1910 and 1936 were due to the development and adoption, during this period, of automatic looms which were already in use in 1910 for the six other textile fabrics studied. In studying the six other types of cotton cloth, it was found that modern equipment in 1936 permitted an increase of output per man-hour of 46.7 percent for carded-filling sateen and 60.8 percent for combed broadcloth over the output of a mill that would have been up-to-date in 1910. The reductions in labor-time requirements ranged from 31.7 percent for carded-filling sateen to 37.7 percent for combed broadcloth.

Obviously, under the assumptions made, the greatest increase in the man-hour productivity in each mill occurred in the department which underwent the largest amount of mechanical improvement between 1910 and 1936. The largest productivity increase was made possible in the spooling and warping department (see table 2). The increase in the man-hour output of that department ranged from 120 percent for carded-filling sateen to 176.9 percent for combed broad-

cloth. For other products the increases in labor productivity in the spooling and warping departments were:

	Percent of increase
Lawn.....	122. 2
Flannel.....	142. 3
Carded broadcloth.....	150. 0
Print.....	159. 6
Sheeting.....	169. 2
Terry cloth.....	171. 7

The period 1910-36 witnessed significant mechanical advances in spooling and warping equipment. Spoolers were made almost wholly automatic. On the machines in use in 1936, breaks in the threads were repaired by a traveling automatic device. Spindle speeds and capacities were also greatly increased. In the warping equipment three major improvements were introduced during the period: (1) Whereas in 1910 the speed capacity of warpers ranged from 50-60 yards per minute, in 1936 high-speed warpers were operating at from 350 to 900 yards per minute, depending on the type of warper and size of the yarn processed. (2) The addition to the warper of a magazine creel making available additional sets of "cheeses" or cones permitted continuous operation. (3) Enlargement of the section beams permitted the winding of a larger quantity of yarn per beam.

Although the percentage increase in the labor productivity of the spooling and warping department was greater than for any other department, it must be emphasized that this department employs a smaller amount of labor than most of the other departments and consequently has a smaller effect on total labor requirements. On the other hand, while the percentage increase in labor productivity in the carding room was not so large as in the spooling and warping room, it affects a considerably larger number of workers.

Again, although the effect of the use of modern equipment on employment in the spinning room in 1936, as against the use of modern equipment in 1910, appears to be less than in other departments, the mechanical changes in this department had a very large influence on the requirements in the sections of the mill where the stock is processed for spinning.

TABLE 2.—Percent of Increase in Man-Hour Output of Processing Departments in 1936 Compared With 1910

Department	Percent of increase in man-hour output, in mill producing—							
	Carded broad- cloth	Combed broad- cloth	Sheet- ing	Sateen	Flannel	Print	Lawn	Terry cloth
Carding.....	85. 12	101. 86	112. 49	81. 39	95. 92	93. 05	100. 00	112. 30
Spinning.....	32. 21	31. 58	38. 89	32. 75	32. 54	37. 35	43. 06	45. 56
Spooling and warping.....	150. 00	176. 93	169. 18	120. 00	142. 31	159. 74	122. 22	171. 74
Slashing and drawing.....	50. 00	37. 49	60. 00	42. 86	57. 13	66. 67	16. 69	65. 56
Weaving.....	48. 43	60. 00	37. 78	47. 30	50. 56	41. 24	184. 90	290. 62
Cloth room.....	11. 77	15. 38	22. 22	14. 29	22. 22	15. 34	20. 05	2. 99

Changes in Manufacturing Processes and in Labor Requirements, 1910 to 1936

The manufacture of cotton textiles consists essentially of the conversion of raw cotton into yarn and, subsequently, into cloth. The cotton is processed a great number of times, the precise number of individual operations depending upon the type of fabric manufactured.

The multiplicity of operations may, however, be reduced to three basic processes—carding, spinning, and weaving. Carding cleanses the raw cotton, opens up the matted fibers, arranges them in roughly parallel order, and converts the cotton into rope-like form, called roving. Spinning reduces the size of the roving and imparts strength to it by twisting. Weaving combines the warp and the crosswise or filling threads into the type of cloth desired.

The departmental divisions, or "rooms", of a mill correspond roughly to these three basic processes. In the usual mill there are five major departmental divisions: Carding, spinning, spooling and warping, weaving, and cloth departments. Spooling and warping is a preparatory step for weaving, and the cloth department serves mainly for inspection and packaging purposes.

The steps by which the three essential processes are accomplished are minutely subdivided. In order to complete a process the stock goes through a number of distinct operations which may be repeated several times. Two of the products studied require combed yarns while the products of the remaining six require carded yarns. The combing operation, which is performed between the carding and roving operations, removes the short fibers. This leaves the yarn made up of fibers of more uniform length and makes it stronger.

CARDING DEPARTMENT

Opening, cleaning, and parallelizing the fibers, and forming them into a coarse yarn (called roving) require an extended series of processing operations, performed in the carding department.

Opening.—Raw cotton arrives at the mill in large bales, each containing about 500 pounds of cotton in a highly compressed form. Preliminary to machine processing, the bales are trucked to the machine and the gunny sack is removed by the "opener feeder."

This "opening" operation may involve the use of several machines. The function is to "bloom" the cotton, that is, tear apart and fluff up the compressed mass of raw cotton. In addition, the opening machines give the cotton a partial cleaning.

An operator, generally called an "opener feeder" (also "opener hand", "opener", etc.), delivers to the machine successive armfuls of cotton from different bales in order more thoroughly to mix the cotton. When a conveyor is used, the worker spreads the cotton on the conveyor.

The cotton leaves the opening machines "decompressed", that is, enlarged in volume and partly freed of foreign matter, and is delivered by vacuum through a pipe system to bins or to the picking machine.

Picking.—This operation continues the cleaning process and puts the cotton into "laps" of uniform density. The "picker" machine, used for this purpose, passes the fluffed cotton between a pair of rollers to a set of beaters which revolve at high speed and propel the cotton against a series of grid bars through which a portion of the loosened foreign matter falls out. The cotton then moves onto a cylindrical wire cage or screen where an additional portion of the dirt is removed. Following this, the cotton again passes between sets of rollers and emerges at the front of the machine in loosely matted layers or "laps" resembling absorbent cotton. (See fig. 1.) The "lap" or "picker tender", as the operator of the machine is called, removes the full laps from the machine.

Carding.—From the "picker" the laps are fed into the "card." This is a machine with a set of rollers which deliver the cotton onto a large cylinder covered with short vertical wire teeth. This cylinder revolves very close to a series of flats also covered with wire teeth. The cotton passes from the large cylinder onto a smaller cylinder from which it is removed and gathered into rope or sliver form and loosely placed, by means of a coiling device, in a tall can. (See fig. 2.)

Three operators are normally required to tend this machine: The "card tender" who puts the laps on the card, cleans and oils the card, and attends to any interruptions in the carding process; the "card stripper" who periodically removes the cotton fibers which have become imbedded in the wire teeth; and the "doffer" who removes the cans of sliver when filled.

Drawing.—Four to six strands of sliver are fed into drawing rolls (fig. 3) and are combined or drawn out into a single sliver of the same diameter or weight as those entering the machine.

The principal mechanical feature of a drawing frame consists of a series of pairs of small metallic rollers which draw out the sliver into an increasingly longer, and at the same time thinner, cotton strand. This is achieved by regulating the speed of the rollers, each succeeding pair moving more rapidly than the preceding. This reduction of the size of the sliver is called "drafting." This process is also used in the subsequent roving and spinning operations for reducing the sliver to the required cotton thread. The drawn sliver is delivered spiral-like into tall cans.

The operator of the machine, the "drawing-frame tender" (or "drawing tender") places the sliver cans in position, and feeds the sliver to the first set of rollers on the machines. He repairs any breaks in the sliver and removes the full cans from the delivery end of the machine.

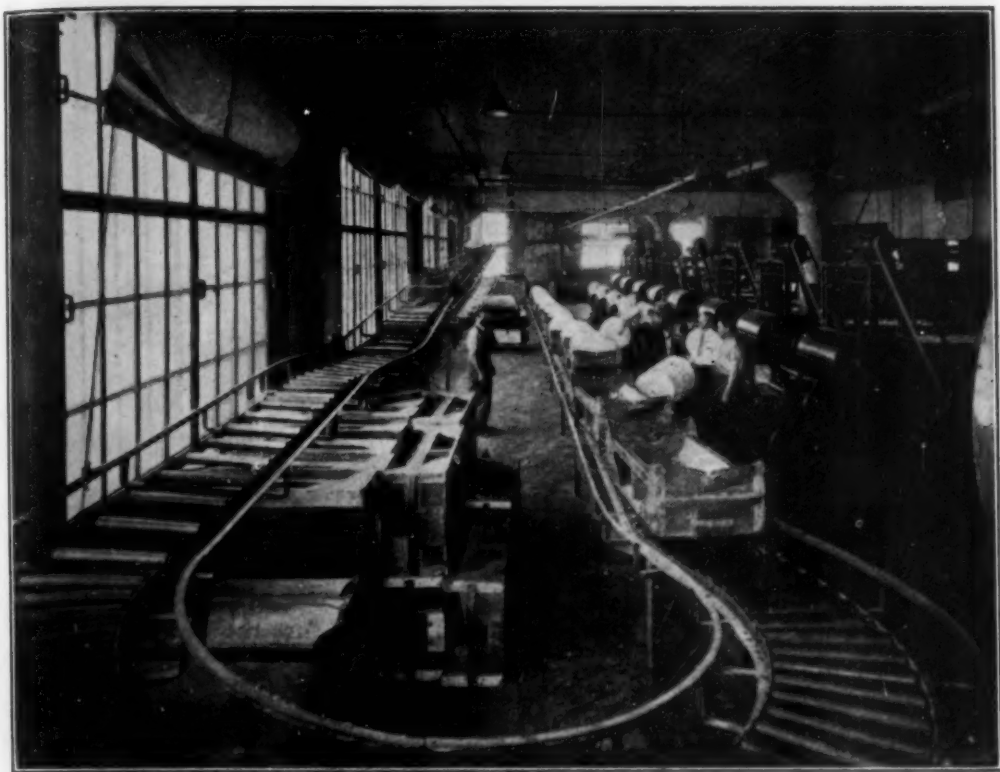


Figure 1.—Lap conveyor transfers opened cotton in lap form, to card room



Figure 2.—Carding machine which changes the cotton lap into an untwisted strand called "sliver"



Figure 3.—Drawing frames receive slivers and convert them into "roving"



Figure 4.—Spinning frames reduce roving into lighter-weight twisted strand called "yarn"

Roving.—This term is used to denote the cotton sliver after it has been drafted and reduced in size, twisted slightly, and wound on double bobbins. The term roving is also applied to the process used in making the roving. The machines are generally called roving frames. The finished drawing sliver is very coarse and must be reduced in size before it can be put into the spinning frame. This is done on a series of roving frames (sometimes called speeders) which are similar in principle and vary only in the size of the bobbins made on them. The four recognized standard roving frames are called slubbers, intermediates, fly-frames, and jacks. On each process sufficient twist is put into the roving in order to permit further processing without stretching. The roving process may be repeated several times, depending on the type of cloth manufactured.

The workers engaged in these processes are called "tenders", "slubber tenders", "intermediate tenders", and "roving tenders." Their main tasks consist of creeling or repairing broken ends and tending the machines. Sometimes the tenders are assisted in creeling and doffing by less skilled "roving hands." "Creeling" is the term used to describe the replacement of an empty or spent package or bobbin by a full package or bobbin on the input end of any textile machine where more than one process end is used. "Doffing" is the term used for describing the replacement of a package or bobbin filled with yarn or roving by an empty one.

Combing.—In the yarns requiring combing the drawing sliver is prepared for the combing process by winding 24 ends together on a sliver machine without drafting. Then the sliver laps are further processed by combining four or more on a ribbon machine and are drafted in proportion to the number of sliver laps used. The ribbon laps are then fed to the combing machine which consists of from six to eight heads where the short staple in the fiber is removed. The cotton from these heads is combined into one strand and put into tall cans similar to those used in the drawing operation. The workers engaged in these processes are called "sliver or ribbon tenders" and "combing tenders."

Changes in labor requirements and machinery in carding department.—A comparison of labor requirements in the carding departments of the eight mills assumed to have produced an identical amount of yards of grey cloth in 1910 and in 1936 is presented in table 3. The largest reduction in man-hours made possible in this department in 1936, as compared with 1910, was in the production of sheeting and terry cloth. In both cases it amounted to 52.9 percent. Somewhat smaller reductions, ranging from 44.9 percent to 50.5 percent, were made possible in the remaining six hypothetical mills.

TABLE 3.—Labor Requirements in Carding Department, Identical Output, 1910 and 1936

Mill producing—	Yards of grey cloth	Requirements for two 40-hour shifts				
		Number of workers		Number of man-hours		
		1910	1936	1910	1936	Percent of decrease
Carded broadcloth.....	437, 890	174	94	6, 960	3, 760	45. 98
Combed broadcloth.....	295, 828	218	108	8, 720	4, 320	50. 46
Sheeting.....	541, 496	238	112	9, 520	4, 480	52. 94
Carded-filling sateen.....	343, 742	156	86	6, 240	3, 440	44. 87
Canton flannel.....	559, 149	290	148	11, 600	5, 920	48. 96
Print.....	307, 000	166	¹ 86	6, 640	¹ 3, 440	48. 20
Lawn.....	220, 000	148	¹ 74	5, 920	¹ 2, 960	50. 00
Terry cloth.....	{ ² 701, 680 ¹ 712, 480 }	242	¹ 114	9, 680	¹ 4, 560	52. 90

¹ Data for 1935.² 1910

Machinery improvements in carding department.—A number of radical changes have been made both in the processing operations and in the machinery used in the carding department since 1910. These account for the considerable increase in the general efficiency of the carding department, and the corresponding reduction in the labor time required for the various operations.

Proper blending of the raw cotton is necessary to produce a uniform product. The latest methods call for a number of blending feeders of large hopper capacity. The cotton is further blended in the hopper of the bale breaker. The opening and blending machines not only open and bloom the cotton further, but remove a high percentage of the dirt and leaf which is common to most cotton. These machines are arranged so that the cotton flows from one to the next automatically. The picking operations, formerly done with three separate machines, requiring manual labor in servicing each process, are now combined in one continuous process. The grid bars on the pickers and cleaning equipment are of an adjustable type, which reduces the loss of good fiber. These improvements in construction and design have made possible a sizable reduction in the manual labor required and the delivery of a better opened, better cleaned, and better blended cotton in lap form, which is more uniform in weight, yard for yard, than was possible with the best equipment in 1910.

There have been no major improvements in carding machines since 1910. Modern cards are equipped with a vacuum stripping device that reduces the manual labor required for the removal of the imbedded fibers from the card teeth. The frequency of stripping has also been greatly reduced. Controlled humidity and cleaner air in the picker room, made possible by the vacuum strippers, have eliminated difficult start-ups and have also reduced the card-fly waste. The size of the delivery can has been increased from 10 to 12 inches

in diameter, which has reduced the manual labor in removing the cans. The quality of the cotton stock delivered in sliver form has also been improved. The substantial reduction in the manual labor required in the operation of a carding machine has enabled the operator to tend more cards with the same amount of physical effort.

Prior to 1920 the usual method of drawing was to repeat the process three times. The 1936 method provides for only one process of drawing and the stock is fed to the machine in the form of a wide ribbon or lap. These ribbon laps are made from the card sliver on an improved lap winder. While the speed of the delivery rolls has been materially reduced, the production of the drawing frame has been greatly increased because of the change in the method of supply.

The combing machinery has been greatly improved, both in design and construction, and is capable of processing considerably more pounds than formerly with less attention on the part of the operator.

Modern roving frames are equipped with long-draft mechanisms, somewhat similar in construction and design to the long-draft devices used on spinning frames. The general construction of the roving frames has been materially improved. Balanced flyers, balanced rails, chain drives, better-machined spindle and flyer gears and better lubrication of them, case-hardened screw-neck steel rolls, and many other improvements have contributed to a higher-speed and a smoother-running roving frame. Long-draft equipment on the spinning frames has made it possible to spin from coarser roving, and the number of separate processes required in the roving department has been considerably reduced.

SPINNING DEPARTMENT

The roving delivered to the spinning frame (fig. 4) must be further drafted to the required size. In order to give the yarn maximum strength, considerable twist is imparted to it by the spinning frame. The spinning frame now generally used in the manufacture of the majority of cotton yarns is of the ring type. It consists essentially of a series of drafting rolls, similar to those used on drawing and roving frames, a number of steel rings upon which a small wire or "traveler" revolves, and the same number of spindles revolving at a speed of from 4,000 to 11,000 revolutions per minute, depending upon the type of yarn. Twist is imparted to the spun yarn by the wire traveler revolving around the bobbin which is carried on the spindle and on which the finished yarn is wound.

The duties of the operator or spinner consist mainly of repairing broken ends, creeling-in roving bobbins to replace those exhausted, and cleaning beneath the drafting rolls. [Doffers] remove the full bobbins of spun yarn, replacing them with empty bobbins. Cleaners remove the lint, etc., from the underpart of the frame.

Changes in spinning labor requirements.—The changes in labor requirements in the spinning department for an identical output of the eight hypothetical mills made possible between 1910 and 1936 are shown in table 4. The reduction in labor time needed to operate this department in 1936, as compared with 1910, ranged from 24 percent in producing combed broadcloth to 31.3 percent for terry cloth. In the majority of the other products the decrease in the labor time required to produce an equal amount of cloth in 1936, as compared with 1910, amounted to approximately 25 percent.

TABLE 4.—*Labor Requirements in Spinning Department, Identical Output, 1910 and 1936*

Mill producing—	Yards of grey cloth	Requirements for two 40-hour shifts				
		Number of workers		Number of man-hours		
		1910	1936	1910	1936	Percent of decrease
Carded broadcloth.....	437, 890	156	118	6, 240	4, 720	24.36
Combed broadcloth.....	295, 828	150	114	6, 000	4, 560	24.00
Sheeting.....	541, 496	200	144	8, 000	5, 760	28.00
Carded-filling sateen.....	343, 742	154	116	6, 160	4, 640	24.67
Canton flannel.....	559, 149	220	166	8, 800	6, 640	24.55
Print.....	307, 000	154	¹ 112	6, 160	¹ 4, 480	27.30
Lawn.....	220, 000	146	¹ 102	5, 840	¹ 4, 080	30.10
Terry cloth.....	{ ² 701, 680 ¹ 712, 480 }	234	¹ 158	9, 200	¹ 6, 320	31.30

¹ Data for 1935.² 1910.

Improvements in spinning machinery.—There are several makes of long-draft devices which permitted the use of a roving in 1936 approximately twice as coarse as that used in 1910. The coarser roving can be made on a large-size bobbin, which decreases the frequency of replenishing the supply packages on the spinning frame.

The 1936 spinning-frame spindles were driven by flat cotton tapes with a tension-equalizing device which permitted uniform speed. The spinning bobbin in use in 1936 had a larger diameter and contained more yarn, so that doffing was less frequently required. The wider-gage frames eliminated the necessity of using separators, resulting in fewer ends being unnecessarily broken. The thread boards in 1936 were equipped with a device which decreased the strain on the yarn at the bottom and top of the bobbin. The spindle bases had been redesigned and had a larger oil reservoir, decreasing the frequency of filling. The rings in 1936 were harder and much better polished, and reduced the drag or tension on the yarn and consequently resulted in fewer ends being broken for this cause. The spindle speeds had been increased. The general spinning-frame efficiency had been increased through the use of larger bobbins and the resulting reduction in time lost for doffing. Improved and controlled humidification and temperature made it possible to control the moisture in the cotton fibers, with a decided effect in reducing end breakage.



Figure 5.—High-speed warper winds many threads onto large spool, or "section beam"

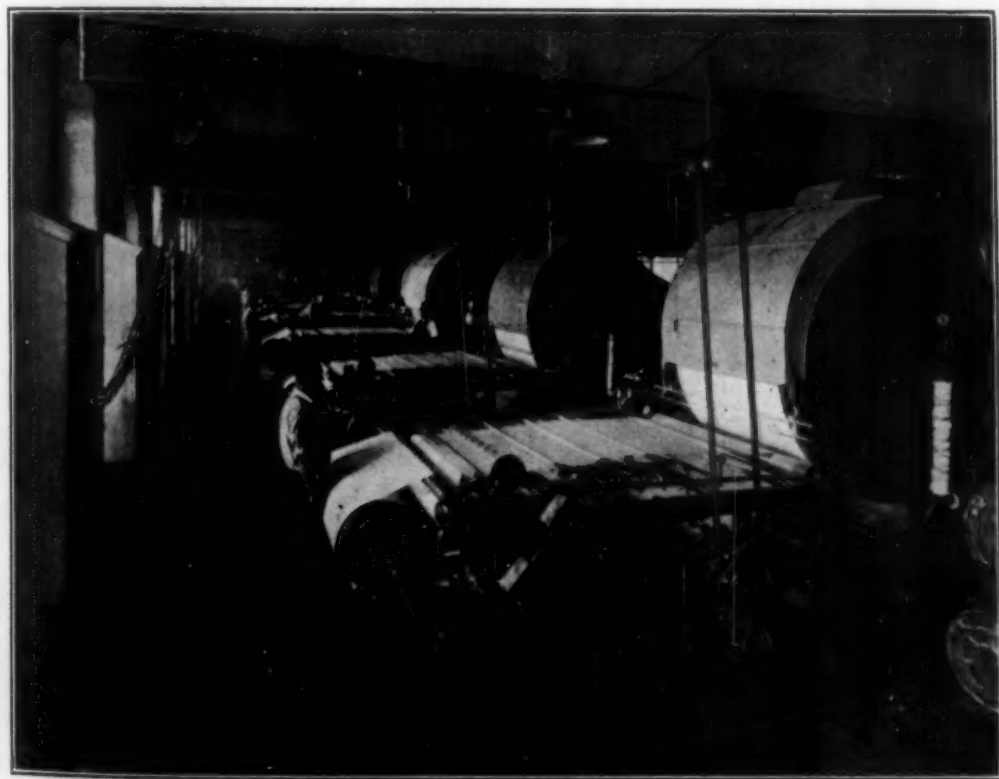


Figure 6.—Slasher machine impregnates each warp yarn with a starch mixture, or "sizing"



Figure 7.—Automatic looms interlacing the warp and filling yarns, and producing cloth

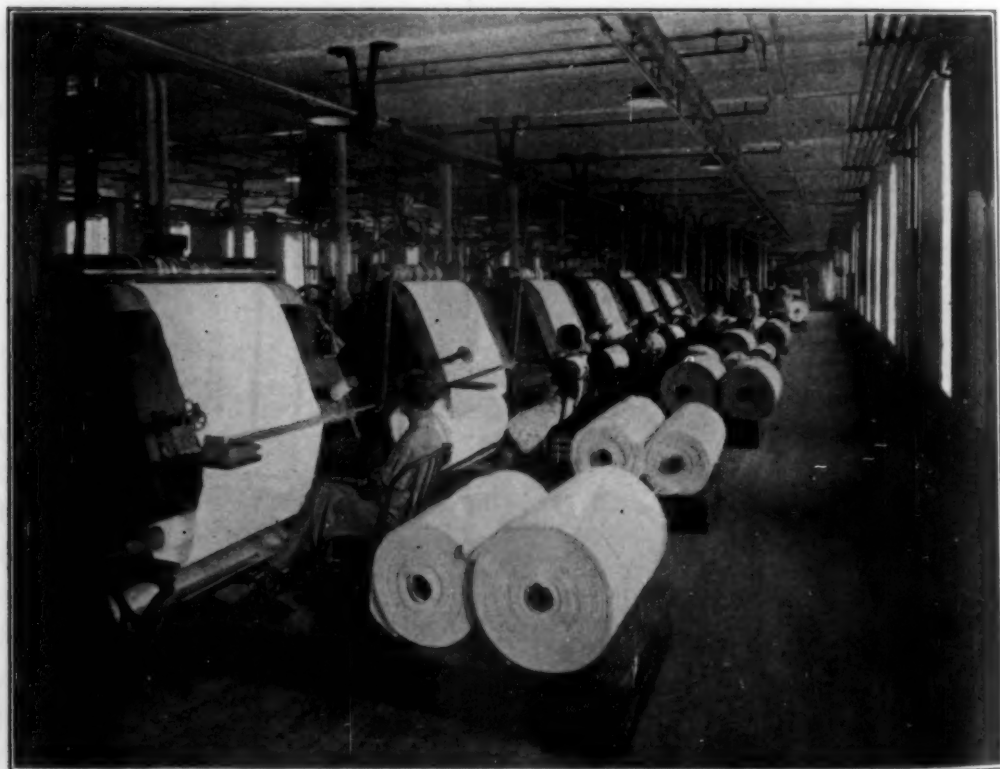


Figure 8.—Inspecting machines which reveal any imperfections in the finished product

SPOOLING AND WARPING DEPARTMENT

The yarn designed for use in "filling" (weft or crosswise threads) is ready to go to the weaving department directly after it passes the spinning process, if spun on bobbins suitable for direct loom use. Warp threads, however, must still undergo several processing operations before reaching the weaving stage.

Spooling.—The first of these operations is spooling. It consists of winding the cotton yarn from a large number of the small spinning bobbins onto a large package. This is necessary in order to obviate the constant replenishing of the supply of small bobbins on the warper. It may be performed on either the "spooler" (or "cone winder") or the automatic winding machine. The work of the operators varies with the kind of spooling equipment used.

Warping.—In this operation between 300 and 400 warp ends are wound on a large section beam (fig. 5). An expansion comb is used to keep the individual ends properly spaced from each other. The machine is equipped with a mechanical or electrical stop-motion attachment which automatically stops the machine whenever an end breaks. The operator or "warper tender" repairs any broken threads and assists the tie-over or creel girl in replenishing the creel supply whenever necessary. The section beams are doffed or removed from the beam by beam men.

Changes in labor requirements in spooling and warping.—The changes in labor requirements in spooling and warping which were made possible by the improvements in the machines and equipment used in 1936 are presented in table 5. The possible decrease in man-hour requirements for this department in 1936, as against 1910, ranged from 54.5 percent in carded-filling sateen to 63.9 percent in combed broadcloth.

TABLE 5.—Labor Requirements in Spooling and Warping, Identical Output, 1910 and 1936

Mill producing—	Yards of grey cloth	Requirements for two 40-hour shifts				
		Number of workers		Number of man-hours		
		1910	1936	1910	1936	Percent of decrease
Carded broadcloth.....	437,890	60	24	2,400	960	60.00
Combed broadcloth.....	295,828	72	26	2,880	1,040	63.89
Sheeting.....	541,496	70	26	2,800	1,040	62.85
Carded-filling sateen.....	343,742	44	20	1,760	800	54.54
Canton flannel.....	559,149	126	52	5,040	2,080	58.73
Print.....	307,000	52	1 20	2,080	1 800	61.50
Lawn.....	220,000	40	1 18	1,600	1 720	55.00
Terry cloth.....	{ 701,680 1 712,480 }	136	1 50	5,440	1 2,000	63.20

¹ Data for 1935.

² 1910.

Some explanation for the considerable reduction in the possible labor requirements in this department may be found in the fact that in 1910 a spooling machine averaged approximately 0.33 pounds of yarn per hour, while in 1936 the machine could process 1.83 pounds of yarn, or nearly 6 times as much. Similarly, in 1910 a warper averaged 31.3 pounds of yarn per hour, as against an average of 328 pounds per hour processed in 1936.

Changes in spooling machinery.—There have been two distinct developments in spooling equipment. One of these is the automatic machine on which all the knots are tied by the machine itself. The yarn is removed from the bobbin at a rate of approximately 1,200 yards per minute, as compared with an average speed of about 200 yards per minute in 1910. The only labor necessary is for supplying the bobbins with yarn and placing them in a slide with the outside end of yarn inserted in a convenient holder. The winding speed is uniform, and the tension devices with which the machine is equipped permit a minimum of yarn strain. The wound packages are suitable for direct use in the high-speed warping machines which follow.

The second development consists of high-speed tube or cone winders, which operate at a uniform speed of about 600 yards per minute, at which the knots are tied by hand-knotting machines. The machine is so designed as to permit a reduction in the time required to tie a knot.

Changes in warping machinery.—High-speed warpers have been designed to operate at 350 to 900 yards per minute, depending upon the type and size of yarn processed. In 1910, the usual warper speed averaged about 50 yards per minute. Magazine creels have been developed which permit continuous warping operation. Improved tension devices permit uniform tension on every end, and reduce the end breakage on the warper proper and subsequent operations. The creel packages from either type of winder contain approximately 3 times as much yarn as in 1910. New-type section beams have been developed to operate at high speed and the size has been increased to hold approximately twice as much yarn.

SLASHING AND DRAWING-IN DEPARTMENT

Slashing.—Before the yarn is ready for weaving, it must be treated with a combination of starch and softeners. This process, called "slashing", is performed in the slashing department (fig. 6). The workers engaged in this operation are called "slasher tenders"; their duty is to supervise the operation of the machine. They may also lend some assistance to the helper, in replenishing the supply of section beams.

Drawing-in and tying-in.—Prior to putting the loom beam into the loom it is necessary to separate the ends of the warp and draw them through the drop wires, the harnesses, and the reed, according to a pre-

determined design. The stationary warp-knotting or tying-in machine was developed prior to 1910. Since 1910 a portable machine, which offers definite advantages for certain types of fabrics, has been introduced in many mills.

Changes in labor requirements.—A comparison of the labor time necessary in the slashing and drawing-in department of the eight hypothetical mills in 1910 and 1936 is shown in table 6. Improved processing and changes in equipment made possible decreased man-hour requirements ranging from 14.3 percent in the production of lawn cloth to 39.6 percent in terry cloth and 40 percent in print cloth.

Among the principal factors responsible for these reductions in man-hour requirements was the increase in the hourly output of the slashing machine. For example, in 1910 the slashing equipment in carded broadcloth could process 131 pounds of warp per hour, whereas the 1936 equipment could process 327 pounds per hour and produce a quality of sized yarn considerably superior to the 1910 product.

TABLE 6.—*Labor Requirements in Slashing and Drawing-in Department, Identical Output, 1910 and 1936*

Mill producing—	Yards of grey cloth	Requirements for two 40-hour shifts				
		Number of workers		Number of man-hours		
		1910	1936	1910	1936	Percent of decrease
Carded broadcloth.....	437,890	24	16	960	640	33.33
Combed broadcloth.....	295,828	22	16	880	640	27.27
Sheeting.....	541,496	32	20	1,280	800	37.50
Carded-filling sateen.....	343,742	20	14	800	560	30.00
Canton flannel.....	559,149	44	28	1,760	1,120	36.36
Print.....	307,000	20	¹ 12	800	¹ 480	40.00
Lawn.....	220,000	14	¹ 12	560	¹ 480	14.30
Terry cloth.....	² 701,680 ¹ 712,480	96	¹ 58	3,840	¹ 2,320	39.60

¹ Data for 1935.

² 1910.

WEAVING DEPARTMENT

When the threads have been arranged in proper order, the ends tied in, the warp beam placed in the loom, and the necessary adjustments made, the process of weaving the cloth begins. The modern loom performs a function similar to that of the most primitive looms, which is essentially the crossing or interlacing of one set of threads with another. Reduced to simplest terms, the loom mechanism raises part of the warp threads and lowers the rest, thus making a v-shaped opening through which the "shuttle", carrying the filling or weft thread, passes. Then the position of the warp threads is reversed and the filling left by the shuttle is tightly locked into the warp, by the forward motion of the reed. (See fig. 7.) The modern loom accomplishes this series of operations with a speed beyond the capacity of the eye to follow.

The duties of the weaver vary somewhat from mill to mill. Generally, one weaver operates a battery of looms, repairs yarn breaks, and corrects weaving imperfections in the woven cloth. The number of looms tended by a weaver varies according to the type of cloth, the quality of the yarn used, and the physical condition of the looms.

A "loom fixer" makes loom repairs, inspects the loom, and replenishes full beams. When a large number of breaks occur in the warp, they are repaired by a "smash hand". The actual placing of the filling bobbins on the automatic loom battery does not require skill and the task is often assigned to a "battery hand."

Changes in weaving labor requirements.—The largest reduction in the labor time required in the weaving department between 1910 and 1936 was made possible in the mills producing terry cloth and lawn. As shown in table 7, weaving the same amount of terry cloth in 1936 as in 1910 could be accomplished by 276 workers in 1936 as against 1,186 in 1910. This was a reduction of 74.4 percent. In other words, the work performed by four workers in the weave room in a terry-towel mill in 1910 could be done by one worker with the equipment available in 1936. The changes possible in the production of lawn cloth were almost as great. These large decreases in labor requirements in the weaving department were made possible largely because of automatic looms, which were not available or not adapted for these products in 1910. In the production of the other cloths automatic looms had been used in 1910. Further improvements made possible a reduction in labor requirements of the weaving department between 1910 and 1936 ranging from 26.9 percent in the weaving of sheeting to 37.5 percent in combed broadcloth.

TABLE 7.—*Labor Requirements in Weaving Department, Identical Output, 1910 and 1936*

Mill producing—	Yards of grey cloth	Requirements for two 40-hour shifts				
		Number of workers		Number of man-hours		
		1910	1936	1910	1936	Percent of decrease
Carded broadcloth.....	437,890	190	128	7,600	5,120	32.63
Combed broadcloth.....	295,828	176	110	7,040	4,400	37.50
Sheeting.....	541,496	238	174	9,520	6,960	26.89
Carded-filling sateen.....	343,742	218	148	8,720	5,920	32.11
Canton flannel.....	559,149	274	182	10,960	7,280	33.58
Print.....	307,000	178	¹ 126	7,120	¹ 5,040	29.20
Lawn.....	220,000	268	¹ 94	10,720	¹ 3,760	64.90
Terry cloth.....	{ ² 701,680 ¹ 712,480 }	1,186	² 276	43,120	¹ 11,040	74.40

¹ Data for 1935.

² 1910.

Improvements in machinery in weaving department.—In 1910 the plain automatic 40-inch looms were operated at about 160 picks ² per

² I. e., crosswise threads per inch in woven cloth.

minute. A 1936 loom of similar specifications would operate at about 192 picks per minute. This increase of approximately 20 percent is more than realized in the loom output, as the weaving efficiency of looms in 1936 averages from 2 to 5 percent greater than could have been obtained in 1910 on the same fabric.

A number of important improvements made in loom designs since 1910 have made the machine more efficient and more automatic. A modern loom operates more smoothly and with less breakage in threads than the loom of 1910. It also requires less tending and less frequent adjustments during the process.

A partial list of the major developments in loom construction and design since 1910, without regard to the order of their importance, is presented below:

1. Completely redesigned loom with precision machine work, better materials wherever desirable, and balanced motions to reduce vibration.
2. Improved let-off and take-up motions, to insure more evenly woven fabrics.
3. Larger loom beams, to reduce the labor required for warp changing and loom adjusting.
4. Larger cloth rolls, to reduce the labor required for removal from the loom, and to reduce waste.
5. Shuttle boxes redesigned, to permit the use of larger filling bobbins thus reducing the frequency of bobbin transfers and loom stoppages at the time of transfer.
6. Material improvement in the warp stop motions, both in the more positive action and in the indicating device for showing the weaver the broken end, thus reducing the time required to repair a warp stop.
7. Shuttle tensions and shuttle eyes redesigned, with resultant reduction of loom stops at the time of the bobbin transfer, and production of cloth with more uniform tension.

CLOTH ROOM

The most important development in the cloth room is the high-speed, automatically controlled shear and brushing machine. The cloth rolls are sewed together as they are received, and are automatically sheared and brushed at a speed of 120 yards per minute. This shearing operation removes loose and hanging threads, and materially reduces the hand work required of the inspectors.

The new inspecting machines (fig. 8) are designed to handle larger cloth rolls direct from the shear, thus greatly diminishing the manual work incidental to the servicing of cloth rolls in and out of the machine. The machine design also permits a more careful inspection of the cloth.

Competition, as well as market and merchandising conditions, made necessary a more rigid inspection of the fabrics in 1936 than was customary in 1910. The improved cloth-room machinery makes

it possible to provide better inspection with a slight reduction in the labor requirements; a still further reduction in labor time could be made, were it not for the increased inspection requirements.

Table 8 gives the possible changes in labor requirements in the cloth room, for the production of an equal amount of grey cloth, in 1910 and in 1936. The largest reduction (18.2 percent) occurred in sheeting and canton flannel and the smallest (2.90 percent) in terry toweling.

TABLE 8.—*Labor Requirements in Cloth Room, Identical Output, 1910 and 1936*

Mill producing—	Yards of grey cloth	Requirements for two 40-hour shifts				
		Number of workers		Number of man-hours		
		1910	1936	1910	1936	Percent of decrease
Carded broadcloth.....	437, 890	38	34	1, 520	1, 360	10. 53
Combed broadcloth.....	295, 828	30	26	1, 200	1, 040	13. 33
Sheeting.....	541, 496	44	36	1, 760	1, 440	18. 18
Carded-filling sateen.....	343, 742	32	28	1, 280	1, 120	12. 50
Canton flannel.....	559, 149	44	36	1, 760	1, 440	18. 18
Print.....	307, 000	30	¹ 26	1, 200	¹ 1, 040	13. 30
Lawn.....	220, 000	24	¹ 20	960	¹ 800	16. 70
Terry cloth.....	{ ² 701, 680 ¹ 712, 480 }	68	¹ 66	2, 720	¹ 2, 640	2. 90

¹ Data for 1935.

² 1910.

MISCELLANEOUS LABOR

The 1936 requirements of miscellaneous labor, power, and yard maintenance, etc., in the hypothetical mills assumed in this study are larger for all products except terry cloth. The increases ranged from 10 percent for print cloth to 18.2 percent in sheeting. In the manufacture of terry toweling the labor-time requirement of power, yard maintenance, and miscellaneous labor in 1936 as compared with 1910 was reduced nearly 3 percent.

TABLE 9.—*Requirements of Miscellaneous Labor, Identical Output, 1910 and 1936*

Mill producing—	Yards of grey cloth	Requirements for two 40-hour shifts				
		Number of workers		Number of man-hours		
		1910	1936	1910	1936	Percent of increase
Carded broadcloth.....	437, 890	30	35	1, 200	1, 400	16. 66
Combed broadcloth.....	295, 828	29	34	1, 160	1, 360	17. 24
Sheeting.....	541, 496	33	39	1, 320	1, 560	18. 18
Carded-filling sateen.....	343, 742	29	34	1, 160	1, 360	17. 24
Canton flannel.....	559, 149	34	40	1, 360	1, 600	17. 65
Print.....	307, 000	60	¹ 66	1, 200	¹ 1, 320	10. 00
Lawn.....	220, 000	54	¹ 60	1, 080	¹ 1, 200	11. 10
Terry cloth.....	{ ² 701, 680 ¹ 712, 480 }	70	¹ 68	1, 400	¹ 1, 360	³ 2. 90

¹ Data for 1935.

² 1910.

³ Decrease.

Changes in Occupational Requirements

Table 10 shows the occupational requirements, by departments, in the eight hypothetical textile mills assumed to have produced an amount of grey cloth in 1936 equal to that in 1910. It will be noticed that there is practically no change in the number of supervisors, such as overseers, foremen, etc., between the two periods. The principal occupational changes occur in the sections where effective changes in machinery or equipment were introduced.

In the carding department the number of card tenders and strippers required fell substantially. Drawing tenders, slubber tenders, and intermediate tenders were eliminated in most cases, and the number of roving-frame tenders was greatly reduced. Their place was taken by lap winders and draw tenders, but the number of such new jobs was small in comparison with those replaced. Thus, 24 drawing tenders, 12 slubber tenders, and 20 intermediate tenders, needed in making carded broadcloth in 1910, could be replaced by 10 lap winders in 1936. At the same time 56 roving-frame tenders were reduced to 48, and the jobs of 4 roving men, 6 doffers, 2 boxboys, and 2 scrubbers could have been abolished.

In the case of the two types of cloth which require a combing operation (combed broadcloth and lawns) there were also large reductions in the number of workers necessary to tend the machines performing the combing operations. For combed broadcloth the number of sliver and ribbon-lap tenders was cut from the 20 required in 1910 to 4, and the number of combers tenders was reduced from 26 to 6.

In the spinning department large reductions were made possible among cleaners and sweepers, filling doffers, and warp doffers. The number of spinners, the principal skilled operation in this department, was reduced by more than 50 percent, in some cases more than 60 percent (sheeting and print cloth). The place of some of the skilled spinners was taken by tapemen, sweepers, bottom cleaners, and top cleaners.

The largest reduction in the spooling and warping department occurred among spooler tenders and warper tenders, the principal skilled occupations in this department. In the mills making print cloth, lawns, and terry cloth, the spooler tenders were no longer required; in the mills making the other textile products surveyed, the number required was reduced by more than 75 percent.

In the slashing and drawing-in departments the principal possible reductions in the labor requirements in 1936 as compared with 1910 occurred among slasher tenders and slasher helpers. This is a comparatively small department, particularly in mills producing print cloth and lawns, and the total reductions in the labor force of this department were not so great as in some of the other departments.

As is the case in the other departments, the supervisory occupations in the weaving department in 1936 remained unchanged. The

number of loom fixers required, however, was reduced by more than 25 percent, because of the fact that fewer looms operating at higher speed are required to produce a given quantity of cloth. The required number of weavers, the outstanding skilled occupation in this department, was reduced by amounts ranging from 60 to nearly 85 percent. Attention is called particularly to terry cloth, where to weave the same amount of cloth in 1936 as in 1910 it was necessary to have only 148 weavers as compared with 844 weavers in 1910. This tremendous change was due largely to the fact that in 1910 the terry cloth had not yet been adapted to the use of automatic looms.

In all types of products some of the skilled weavers eliminated were replaced by unskilled smash hands, bobbin men and battery hands.

No significant changes of occupational requirements in the cloth room have occurred in 1936 as compared with 1910.

TABLE 10.—*Labor Required in Textile Mills Producing Identical Amounts of Grey Cloth in 1910 and in 1936*

CARDING DEPARTMENT

Occupation	Number of workers required															
	Carded broad-cloth		Combed broad-cloth		Sheeting		Carded-filling satteen		Canton flannel		Print		Lawn		Terry cloth	
	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1935	1910	1935	1910	1935
All occupations.....	174	94	218	108	238	112	156	86	200	148	166	86	148	74	242	114
Overseers.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Second hands.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4
Picker foremen.....	2	2	2	2	2	2	2	2	2	2	2	2	2	(1)	2	2
Opening and picking hands.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	30	10
Opener hands.....	2	2	2	2	4	4	2	2	6	6	2	2	2	2	(2)	(2)
Waste men.....	2	2	4	4	2	2	2	2	2	2	2	2	2	2	4	2
Picker hands.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	(1)	(2)	(2)
Picker tenders.....	6	2	6	2	10	4	6	2	22	8	6	2	(2)	2	(2)	(2)
Card grinders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	10	10
Boss grinders.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	(2)	(2)
Assistant grinders.....	2	2	2	2	6	6	2	2	10	10	2	2	2	2	(2)	(2)
Card tenders and strippers.....	20	12	20	12	28	20	16	10	44	26	14	8	10	6	34	(1)
Card tenders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	18
Stripper men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	(2)	(2)	(2)	(2)	(2)	(2)	2
Oilers.....	4	2	2	2	6	4	4	2	4	4	4	2	6	4	(2)	(2)
Lap men.....	(2)	2	(2)	2	(2)	2	(2)	2	4	4	2	2	2	(1)	4	4
Lap winders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12	(2)	(2)	(2)	(2)	2	(2)	14
Third hands.....	4	2	2	2	6	4	4	2	(2)	(2)	4	2	6	4	(2)	(2)
Lap winders and drawing tenders.....	(2)	10	(2)	10	(2)	14	(2)	10	(2)	(2)	(2)	8	(2)	(2)	(2)	(2)
Section men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	4	(2)	(2)	(2)	(2)	6	4
Drawing tenders.....	24	(1)	24	(1)	40	(1)	20	(1)	44	16	24	(1)	8	2	40	8
Slubber tenders.....	12	(1)	10	(1)	16	(1)	10	(1)	38	(1)	10	(1)	2	(1)	28	(1)
Long-draft slubber tenders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	32	(2)	(2)	(2)	(2)	(2)	(2)
Intermediate tenders.....	20	(1)	18	(1)	26	(1)	16	(1)	84	(1)	18	(1)	(2)	(2)	62	(1)
Roving-frame tenders.....	56	48	56	48	66	38	54	42	(2)	(2)	56	46	(2)	(2)	(2)	12
Roving-frame creelers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	8
Roving men.....	4	(1)	4	(1)	6	(1)	4	(1)	4	(1)	4	(1)	4	2	6	2
Roving-frame doffers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	8
Boxboys.....	2	(1)	2	(1)	2	(1)	2	(1)	2	2	2	(1)	2	(1)	(2)	(2)
Doffers.....	6	(1)	6	(1)	10	(1)	4	(1)	8	6	6	(1)	6	(1)	(2)	(2)
Scrubbers.....	2	(1)	2	(1)	2	2	2	(1)	2	(1)	2	2	2	2	(2)	(2)
Scrubbers and sweepers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	4
Canboys.....	(2)	2	(2)	2	(2)	4	(2)	2	2	2	(2)	(2)	(2)	(2)	(2)	(2)
Boss combers.....	(2)	(2)	2	2	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Boss combers and helpers.....	(2)	(2)	2	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Sliver and ribbon lap tenders.....	(2)	(2)	20	4	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	4	(2)	(2)

¹ Job eliminated in 1936.

² Not required in this type of mill.

³ Job did not exist in 1910.

TABLE 10.—Labor Required in Textile Mills Producing Identical Amounts of Grey Cloth in 1910 and in 1936—Continued

CARDING DEPARTMENT—Continued

Occupation	Number of workers required															
	Carded broad-cloth		Combed broad-cloth		Sheeting		Carded-filling sateen		Canton flannel		Print		Lawn		Terry cloth	
	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1935	1910	1935	1910	1935
Comber tenders.....	(2)	(2)	26	6	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	10	4	(2)	(2)
First intermediate tenders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	(1)	(2)	(2)
Second intermediate tenders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12	(1)	(2)	(2)
Jack tenders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	50	(1)	(2)	(2)
Fly-frame tenders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	16	(2)	(2)
Fine speeder tenders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12	(2)	(2)
Helpers on slubbers and intermediates.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	(1)

SPINNING DEPARTMENT

All occupations.....	156	118	150	114	200	144	154	116	220	166	154	112	146	102	230	158
Overseers.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Second hands.....	2	2	2	2	2	2	2	2	2	2	2	2	4	2	4	4
Section men.....	8	8	8	8	8	8	8	8	10	10	8	8	6	8	10	8
Roving men.....	6	6	6	6	10	10	6	6	14	12	6	6	4	4	(2)	(2)
Oilers.....	4	4	4	4	4	4	4	4	4	4	4	4	(3)	4	6	4
Band men.....	4	(1)	4	(1)	4	(1)	4	(1)	4	(1)	4	(1)	2	(1)	10	(1)
Waste men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2	(2)	(2)	(2)	(2)	2	2
Cleaners and sweepers.....	14	(1)	14	(1)	18	(1)	14	(1)	20	(1)	14	(1)	10	(1)	16	12
Filling doffers.....	14	10	8	6	28	20	16	12	18	12	14	10	8	8	14	8
Warp doffers.....	12	8	12	10	10	8	8	6	20	12	10	6	8	4	28	12
Warp spinners.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	72	36	(2)	(2)	36	16	96	40
Spinners.....	88	40	88	38	112	46	88	38	(2)	90	38	(2)	(2)	(2)	(2)	(2)
Filling spinners.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	50	22	(2)	(2)	34	18	22	8
Scrubbers.....	2	(1)	2	(1)	2	(1)	2	(1)	2	(1)	2	(1)	2	2	4	4
Tapemen.....	(2)	2	(2)	2	(2)	4	(2)	2	(2)	4	(2)	2	(2)	2	(2)	4
Sweepers.....	(2)	6	(2)	6	(2)	8	(2)	6	(2)	10	(2)	6	4	4	(2)	(2)
Bottom cleaners.....	(2)	10	(2)	10	(2)	10	(2)	10	(2)	12	(2)	10	(2)	(2)	(2)	14
Top cleaners.....	(2)	18	(2)	18	(2)	20	(2)	18	(2)	26	(2)	18	(2)	16	(2)	24
Bobbin cleaner operators.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Shaft oilers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(1)	2	(1)
Spindle oilers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(1)	(2)	(2)
Third hands.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(1)	(2)	(2)
Roving carriers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	(1)	(2)	(2)
Back boys.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	16	(1)	(2)	(2)
Cleaners.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	10	(2)	(2)
Robbin strippers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(2)	(2)
Yarn and roving men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	16	12

SPOOLING AND WARPING DEPARTMENT

All occupations.....	60	24	72	26	70	26	44	20	126	52	52	20	40	18	136	50
Overseers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2	(2)	(2)	(2)	(2)	2	2
Section men.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	(2)	(2)
Second hands.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2
Spooler tenders.....	40	10	52	12	46	8	26	6	76	24	36	(1)	26	(1)	78	(1)
Warper tenders.....	8	4	8	4	8	4	6	4	16	6	6	(1)	6	4	18	(1)
Warper men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(2)	(2)	(2)	(1)
Spooler men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	8	(1)
Creel girls.....	6	2	6	2	8	4	6	2	18	6	(2)	2	(2)	(2)	(2)	6
Yarn men.....	2	2	2	2	4	4	2	2	6	6	(2)	(2)	(2)	(2)	(2)	(2)
Tie-over girls.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	24	(1)
Beam men.....	2	2	2	2	2	2	2	2	6	4	(2)	(2)	(2)	(2)	(2)	(2)
Yarn and beam men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	4	2	(1)	(2)	(2)
Tailing girls.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	(2)	(2)	4
Automatic-spooler girls.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	8	(2)	(2)	(2)	(2)
Yarn carriers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(2)	(2)
Winders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	10	(2)	(2)
Creelers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	(1)	4	(1)	(2)	(2)
Spooler and warper men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	10
Spooler girls.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	16
Winders colored filling.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6
Warper girls.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4

¹ Job eliminated in 1936.² Not required in this type of mill.³ Job did not exist in 1910.

TABLE 10.—Labor Required in Textile Mills Producing Identical Amounts of Grey Cloth in 1910 and in 1936—Continued

SLASHING AND DRAWING-IN DEPARTMENT

Occupation	Number of workers required															
	Carded broad-cloth		Combed broad-cloth		Sheeting		Carded-filling sateen		Canton flannel		Print		Lawn		Terry cloth	
	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1935	1910	1935	1910	1935
All occupations.....	24	16	22	16	32	20	24	14	44	28	20	12	14	12	96	58
Slasher foremen.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Slasher tenders.....	10	4	8	4	12	4	8	4	18	8	8	(1)	6	4	48	22
Slasher helpers.....	4	2	4	2	6	4	4	2	8	4	4	2	2	2	12	12
Warp-tying machine operator.....	4	4	4	4	4	4	2	2	6	6	(2)	(2)	2	2	12	(1)
Knot-tying machine operator.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2	(2)	(2)	(2)	(2)
Warp-tying machine helper.....	2	2	2	2	4	2	2	2	6	4	(2)	(2)	(2)	(2)	(2)	(2)
Knot-tying machine helper.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(1)	(2)	(2)	(2)	(2)
Drawing-in girls.....	2	2	2	2	4	4	2	2	2	2	2	2	(2)	(2)	(2)	(2)
Sizemen.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2	(2)	(2)	(2)	(2)	4	2
Slasher men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	(2)	(2)	(2)	(2)
Harness and drawing-in girls.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2	(2)	(2)
Scrubbers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2
Harness men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	2
Harness girls.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	2
Quillers, colored filling.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	10	6
Warp-tying machine operators (portable).....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	8

WEAVING DEPARTMENT

All occupations.....	190	128	176	110	238	174	218	148	274	182	178	123	268	94	1078	276
Overseers.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Assistant overseers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	2
Second hands.....	2	2	2	2	4	4	4	4	4	4	2	2	2	2	10	6
Clerks.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	2
Loom fixers.....	28	22	18	14	34	25	32	26	30	24	26	22	18	14	70	50
Warp changers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	24	8
Oilers.....	4	4	4	4	6	6	6	6	6	6	4	4	(2)	(2)	6	4
Filling and bobbin men.....	10	(1)	8	(1)	16	(1)	12	(1)	10	(1)	10	(1)	(2)	(2)	(2)	(2)
Filling carriers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	20	6
Beam men.....	2	(1)	2	(1)	4	4	2	(1)	4	(1)	2	(1)	2	(1)	(2)	(2)
Beam haulers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	4
Scrubbers.....	4	(1)	4	(1)	4	(1)	2	(1)	4	(1)	4	(1)	2	(1)	6	4
Chain builders.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	2
Cleaners and sweepers.....	16	12	12	10	22	18	20	14	20	12	16	(1)	(2)	(2)	(2)	(2)
Warp men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12	4
Humidifier men.....	2	2	2	2	2	2	2	2	2	2	2	2	(2)	(2)	(2)	(2)
Cloth men.....	2	2	2	2	4	4	2	2	4	4	2	4	(2)	2	4	2
Weavers.....	118	38	120	42	140	44	134	44	188	50	108	36	228	38	844	148
Wire girls.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	(1)	(2)	(2)
Smash hands.....	(2)	6	(2)	4	(2)	8	(2)	6	(2)	6	(2)	(2)	(2)	(2)	(2)	(2)
Supply men.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	2
Bobbin men.....	(2)	4	(2)	4	(2)	6	(2)	6	(2)	6	(2)	(2)	(2)	(2)	(2)	(2)
Filling truckers.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	(2)	(2)	(2)
Bobbin cleaners.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12	4
Battery hands.....	(2)	28	(2)	18	(2)	44	(2)	32	(2)	60	(2)	(2)	(2)	(2)	12	(2)
Bobbin-stripper operators.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	32	(2)	(2)	(2)	(2)
Filling-conditioner men.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	(2)	(2)	(2)	(2)	(2)
Smash piecers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	2	2	6	4
Bobbin boys.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	(2)	2	10	2
Sweepers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12	8
Scrubbers and sweepers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	(2)	2	(2)	(2)
Loom cleaners.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	8	(2)	(2)
Cleaners.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6	(2)	(2)	18	12
Shaft oilers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(1)	(2)	(2)
Loom oilers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	5	(2)	(2)
Filling boys.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	(1)	(2)	(2)
Filling truckers and conditioners.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(2)	(2)
Bobbin strippers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(2)	(2)

¹ Job eliminated in 1936.² Not required in this type of mill.³ Job did not exist in 1910.

TABLE 10.—Labor Required in Textile Mills Producing Identical Amounts of Grey Cloth in 1910 and in 1936—Continued

CLOTH ROOM

Occupation	Number of workers required															
	Carded broad-cloth		Combed broad-cloth		Sheeting		Carded-filling sateen		Canton flannel		Print		Lawn		Terry cloth	
	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936	1910	1936
All occupations.....	38	34	30	26	44	36	32	28	44	36	30	26	24	20	68	66
Overseers.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Head inspectors.....	2	(1)	2	(1)	2	(1)	2	(1)	2	(1)	(2)	(2)	(2)	(2)	(2)	(2)
Inspectors.....	26	22	18	14	32	24	20	16	32	24	(2)	(2)	(2)	(2)	(2)	(2)
Folders.....	4	4	4	4	4	4	4	4	4	4	4	4	2	2	(2)	(2)
Balers.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	(2)	(2)
Checkers.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	(2)	(2)
Shearers and brusher tenders.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	(2)
Head burlers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	2	(1)	2	(1)	(2)	(2)
Burlers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	18	14	14	10	(2)	(2)
Clerks.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	4
Cloth handlers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	8	6
Burlers and trimmers.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	50	50
Truckers to bleachery.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	4	4

POWER, YARD, MAINTENANCE, AND MISCELLANEOUS DEPARTMENT

Occupation	30	35	29	34	33	39	29	34	34	40	30	33	27	30	35	34
All occupations.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Master mechanics.....	5	4	4	3	6	5	4	3	6	5	5	4	4	3	6	4
Machinists.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2
Carpenters.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pipers.....	1	1	1	1	1	1	1	1	1	1	1	1	1	(1)	1	1
Blacksmiths.....	2	1	2	1	2	1	2	1	2	2	2	1	2	1	2	1
Painters.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yard bosses.....	6	5	6	5	8	7	6	5	8	7	6	5	5	4	8	6
Yardmen.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gatekeepers.....	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	2	(1)
Teamsters.....	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4
Watchmen.....	3	4	3	4	3	4	3	4	3	4	3	4	2	4	3	4
Firemen.....	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)
Engineers.....	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)
Oilers.....	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Electricians.....	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1
Waste men.....	(2)	1	(2)	1	(2)	1	(2)	1	(2)	1	(2)	1	(2)	1	(2)	1
Truck drivers.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2
Electrician's helpers.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2
Humidity men.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2
Scrubbers.....	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2	(2)	2

1 Job eliminated in 1936.

2 Not required in this type of mill.

3 Job did not exist in 1910.

The power, yard, maintenance, and miscellaneous departments comprised the only group of workers in all the mills except terry cloth, in which more labor was required in 1936 to produce the same amount of grey cloth as in 1910. The 1936 requirements in these departments ranged from 97 percent of the 1910 force on terry cloth to 118 percent in the case of sheeting. The principal additions to this department were electricians, electrician's helpers, humidity men, and scrubbers. There were no significant reductions in any of the occupations required in this department.

EFFICIENCY AND WAGES IN THE SOVIET UNION IN 1936 AND 1937

A CONSIDERABLE gain in labor efficiency was made in the Soviet Union (U. S. S. R.) in 1936 and 1937 according to an official preliminary estimate based upon an investigation made in order to compare the actual achievements with the planned figures.¹

Under the influence of the Stakhánov movement² and the efficiency propaganda connected with it, the year 1936 showed the greatest gain that has been made in the productivity of labor in the Soviet Union, the percentages of increase in large-scale industries,³ in the years 1929 to 1936 inclusive, being as follows:

	Percent of increase		Percent of increase
1929-----	12.9	1933-----	8.7
1930-----	9.7	1934-----	10.7
1931-----	7.6	1935-----	15.6
1932-----	2.6	1936-----	22.4

The labor turn-over in large-scale industries was considerably decreased during the period 1934 to 1936.

TABLE 1.—*Turn-Over of Labor in Large-Scale Industries, Soviet Union, by Years, 1932 to 1936*

Year	Percent of average number of work- ers engaged		Year	Percent of average number of work- ers engaged	
	Acces- sions	Separ- ations		Acces- sions	Separ- ations
1932-----	127.1	135.3	1935-----	91.6	86.1
1933-----	124.9	122.4	1935 ¹ -----	83.9	79.5
1934-----	100.5	96.7	1936 ¹ -----	86.7	80.2

¹ 11 months.

These figures reveal that the number of accessions decreased by about 40 percent and separations by about 55 percent, during the 5-year period ending with 1936.

This was partly the result of efficiency propaganda; the lengthening of the period of labor contracts, by agreement of the parties concerned; and more rigid enforcement of such contracts through a system of penalties for leaving the job without valid reason and of rewards for remaining on the job for a longer period of time. Increased capital investment, higher wages, and greater use of mechanical power also contributed to the improved productivity. The study under review

¹ Soviet Union. Gosplan No. 3, Moscow, Feb. 10, 1937, pp. 49-54.

² See Monthly Labor Review for March 1936 (pp. 624-626): Movement for Labor Efficiency in the Soviet Union.

³ Large-scale industry comprises all industrial enterprises equipped with mechanical driving power and employing no less than 16 wage earners, and those employing no less than 30 wage earners if without mechanical power.

showed that the capital invested in industry (mainly in manufacturing) increased from 28.6 to 49.0 billion rubles⁴ during the period 1933-36, and a further increase to 68.1 by 1938 is planned. From 1932 to 1937 the use of electrical energy increased 227.5 percent and of all types of mechanical power 197.8 percent. The following table shows the annual earnings per worker planned for 1937 in comparison with 1932, and the funds appropriated by the Soviet Government for the payment of wages in each line of work in 1932 and 1937.

TABLE 2.—Average Annual Wages and Government Appropriations for Wages in Soviet Union, 1932 and 1937

[Paper ruble, in which wages are quoted = 20 cents]

Branch of activity	Average annual wages			Government appropriation for wages		
	1932	Plan for 1937		1932	Plan for 1937	
		Amount	Percent of 1932		Amount	Percent of 1932
	<i>Rubles</i>	<i>Rubles</i>		<i>In million rubles</i>	<i>In million rubles</i>	
Large-scale industry.....	1,466	3,009	205.3	9,240.5	23,356.8	252.8
Wage earners.....	1,385	2,881	208.0	6,467.1	17,219.9	266.3
Building trades.....	1,509	2,912	193.0	4,715.9	4,947.0	104.9
Transportation.....	1,506	3,041	201.9	3,347.3	9,854.9	294.4
Railways.....	1,496	3,037	203.0	2,282.9	5,655.0	247.7
Agriculture.....	866	1,966	227.0	2,474.1	5,089.0	205.7
Public instruction.....	2,078	4,022	193.6	2,800.0	8,808.0	314.6
Public health.....	1,266	2,355	186.0	819.3	2,722.2	332.3
All lines of activity.....	1,427	2,976	208.5	32,737.9	78,330.0	239.3

⁴ Paper ruble, in which wages are quoted = 20 cents.

International Labor Organization

RESULTS OF INTERNATIONAL LABOR CONFERENCE, JUNE 1937

By W. ELLISON CHALMERS, *Assistant Labor Commissioner at Geneva, Switzerland*

BY THE action of the International Labor Conference in Geneva in June of this year, the number of labor treaties (called conventions in the I. L. O.) opened for ratification by the nations of the world was increased from 59 to 63 and the number of recommendations from 48 to 55. More than by these figures, however, the importance of the 1937 conference is indicated by the fact that it adopted the first convention applying the 40-hour week to a basic industry (textiles), launched the International Labor Organization on a continuous study and collaboration in the field of the planning of public works, raised the international standard minimum age of employment from 14 to 15 for both industry and commerce, and adopted a model code for the safety of building workers. Two other items had been on its agenda¹—application of the 40-hour week to the printing and chemical industries—but these were not finally adopted. In addition, the conference passed resolutions on a variety of other labor issues, and engaged in a general debate on the world economic situation.

Such a conference was bound to attract important representatives from many nations. Delegations came from 53 nations including every important country in the world except Germany and Italy. The 101 government delegates included 14 responsible department of labor officials. The 36 worker delegates included many prominent trade-union leaders. Important officers of many employers' organizations were among the 38 employer delegates. The advisers to the three groups numbered 253. The two largest delegations were those of the English and the French, but at least as influential a part in the conference deliberations was played by the United States delegation.

The two United States Government delegates were Edward F. McGrady, Assistant Secretary of Labor, and Miss Grace Abbott of the University of Chicago. When Mr. McGrady had to return to America because of serious labor disputes in America, he was replaced

¹ For an advance summary of the issues to come before the conference, see *Monthly Labor Review*, April 1937 (pp. 885-893).

by Carter Goodrich, United States Labor Commissioner in Geneva. The American employers' delegate was Henry I. Harriman, ex-president of the United States Chamber of Commerce. American workers were represented by Robert J. Watt, secretary of the Massachusetts State Federation of Labor. The delegation also included eight Government advisers, six employer advisers, and four worker advisers.²

For almost all the items on the agenda, each of the three groups within the American delegation was independently represented on appropriate committees.³ By preliminary study and joint consultation, these experts not only prepared for the technical debates, but also reached an agreement upon each important issue that was to come before the conference. Throughout the meetings of committees and in the plenary sessions of the conference, this agreement was maintained, and the American delegation, in contrast to almost all the delegations from other countries, was unanimous in each major vote.

Action on 40-Hour Week

The I. L. O. has been debating two different methods of fixing international standards of working hours. Beginning in 1932, it had attempted to formulate a convention establishing a 40-hour week for all industry. But in 1934, an all-inclusive convention had failed of adoption, and the Organization began the consideration of a different approach. It had been argued that, to be realistic, regulations should take account of the special conditions prevailing in different industries, and therefore that separate conventions were preferable, one for each main industrial grouping. The workers' group at the conference agreed to experiment with this approach only after their efforts to secure the adoption of a blanket convention had proved unsuccessful.

In 1935, therefore, a convention limited to a statement of principle was proposed and adopted, and the conference turned to the consideration of conventions for special industries. In its 1935 and 1936 sessions, the conference debated drafts separately covering the coal, steel, building, glass-bottle, and textile industries, as well as public

² The entire delegation was as follows: Government delegates—Edward F. McGrady, Assistant Secretary of Labor; Miss Grace Abbott, University of Chicago; and later Carter Goodrich, U. S. Labor Commissioner, Geneva. Government advisers—A. Ford Hinrichs, Chief Economist, Bureau of Labor Statistics; Theodore J. Kreps, Stanford University; Otto T. Mallory, Philadelphia; Verne A. Zimmer, Director, Division of Labor Standards; Miss Beatrice McConnell, Children's Bureau; Carter Goodrich; and W. Ellison Chalmers, Assistant U. S. Labor Commissioner, Geneva; Llewellyn E. Thompson, Jr., American vice consul, Geneva. Employer delegate—Henry I. Harriman, Chairman of Board, Boston Elevated Railway Co. Employer advisers—Robert R. West, president, Riverside & Dan River Cotton Mills, Danville, Va.; William Nenke, Chairman of Board, Menke, Kaufman & Co., New York;

Charles M. Winchester, Chairman of Board, J. B. Lyons Co., Albany, N. Y.; William Stix Wasserman, Philadelphia; Arthur Paul, Dextdale Hosiery Mills, Lansdale, Pa.; and J. Howe Volkmann, Ideal Radiator Co., Zurich. Worker delegate—Robert J. Watt, secretary, Massachusetts State Federation of Labor. Worker advisers—Marion Hedges, International Brotherhood of Electrical Workers; Francis J. Gorman, president, United Textile Workers of America; Miss Lillian Herstein, Chicago Federation of Labor; and Frank X. Martel, vice president, International Typographical Union, Detroit. Secretary of the delegation—Miss Mary Hulbert, University of Chicago.

³ For a description of the organization and procedure of the conference, see *Monthly Labor Review*, April 1936 (pp. 953-968).

works. Of this list, only the glass-bottle industry and public works secured the necessary two-thirds vote. The 1937 session was called upon to debate a textile draft again, and, for the first time, drafts for the printing and chemical industries.

In the course of these debates, the special-industry approach had been further elaborated. Preliminary to the formulation of each draft placed on the 1937 agenda, there had been a technical conference of experts in that industry.

In the case of printing and of chemicals, separate technical conferences had been held at which labor, management, and government representatives had debated the desirability of applying the 40-hour principle to their industries.⁴ Each of these discussions had been followed by a debate on the scope of the industry that might be incorporated in a convention, defining the territory to which it might apply.

On the other hand, a wider approach had been tried in the case of the textile industry. The preliminary discussions in the 1936 conference session were followed by the World Textile Conference in Washington, in April 1937, where textile employers, workers, and Government experts had debated not only the working conditions of textile employees, but also the whole range of economic problems that faced the industry. This technical conference made no formal decisions, but its committee reports summarized the judgment of its members.⁵

Adoption of Textile 40-Hour Week Convention

Because of these extensive preliminary discussions, delegates to the 1937 labor conference had before them a wealth of information and opinion upon which to base judgments concerning the desirability and practicability of the 40-hour week as an international standard in the industry.

The preliminary study and discussions had shown quite clearly that a great majority of the workers of the industry were working on a week of more than 40 hours, that a number of countries were especially suffering from Asiatic competition, based on hours much longer and wages much lower than their own, that the industry was steadily expanding in countries which are just developing industrially, with the consequence that exports inevitably were declining for those countries which had been selling to these newer areas; but that on the other hand, French and especially American experience with a 40-hour week had been favorable, that the industry was achieving technological advances especially among some of its more progressive units, and that workers in many countries placed reduced hours in the forefront of their own program of reform.

⁴ *Monthly Labor Review*, January 1937 (pp. 77-78).

⁵ *Monthly Labor Review*, May 1937 (pp. 1132-1135).

The debate of the Committee on Textiles included an extended survey of the general problem before consideration of the specific draft. Most of the employer representatives maintained that the 40-hour maximum was either impossible or undesirable. The American employer representative, on the other hand, considered it quite practicable, and the workers as a group strongly urged its adoption. The American and French Government representatives favored the adoption of a convention, while the British Government delegate opposed it.

The text submitted by the Office was actively debated,⁶ especially on three issues. The first concerned the definition of the industry. The committee finally adopted an inclusive definition with the qualification that if it was overlapped by other conventions in force in a country, the national authority could revise the definition to avoid duplication.

In the second place, the committee sought a draft that would grant a rough equivalence between two different methods of applying the 40-hour week. The Office text had assumed the use of an averaging provision, in order to permit flexibility. The committee accepted this, but added a provision granting additional overtime for those countries which elected to use a flat 40-hour week as a basis in order also to provide flexibility by a limited sanction of longer hours.

The third main question concerned the regulations that might be permitted to countries whose hours were at present so much beyond 40 that an immediate reduction to that figure was impractical and, in any event, unlikely. Japan, India, and China were considered to be in such a classification. The committee made several attempts to work out a compromise for these countries, but not enough support for it materialized in the committee, and efforts to include it in the same draft were abandoned. Instead, the committee recommended that the Governing Body of the I. L. O. should consider a separate convention for such countries, and a resolution to this effect was adopted by the conference.

In an extended debate in the full conference, the convention was defended in three American speeches. Mr. West, for American textile employers, said that he believed the convention "moderate and workable", and referred to the competitive, technological, and psychological reasons which had motivated American employers in continuing to apply the 40-hour week after the N. R. A. had been declared unconstitutional. Mr. Gorman, for American textile workers, declared that he expected little support from most of the employer delegates, but pointed out that workers all over the world demanded favorable action from governments. Mr. Hinrichs, repre-

⁶ In this committee, as in those dealing with printing and chemicals, the only employers who participated in the debate were the American and French. The other employer members, in line with a policy

adopted by the employers' group since 1932, maintained that since they were opposed to the principle they would not discuss the details of its application.

senting the United States Government, urged adoption of the convention as a necessary corollary to technological advance and as a device for the stabilization of international competition.

Although the outcome was in doubt until the last moment, the vote of 88-41 meant that the necessary two-thirds majority had been secured with four votes to spare, and the convention was adopted. Its supporters included the entire worker group, the American and Russian complete delegations, and 47 other delegates representing Australia, Belgium, Brazil, Canada, Denmark, France, Mexico, Norway, New Zealand, Czechoslovakia, and 16 other governments. The opposition included the British, Japanese, Indian, Dutch, Swiss, and Estonian Governments, and most of the employers. It is usual in such voting that a number of government delegates abstain from voting, but the 38 abstentions of the representatives of 21 governments formed an unusually large number.

By the adoption of this convention, the conference has set up a standard for the textile industry in advance of that at present attained in most countries. If ratifications follow in the pattern usual to other I. L. O. conventions, its gradual extension to other countries will mark the steadily broadening acceptance of the standard approved in Geneva. Under the present economic conditions of the industry, however, such an extension will not be easy. With convention ratification in mind, and in order to contribute toward an improvement in the economic position of the industry as well as toward an improvement in working conditions in the industry, the Governing Body, in its October 1937 session, may set up a permanent textile committee. Such action would follow a recommendation of the Washington Textile Conference, and would permit an extension of the discussions begun there of the national and international economic problems of the industry.

Failure of Printing and Chemical 40-Hour Week Conventions

Neither the printing nor the chemical industry debates had been preceded by as extensive a preparation as had textiles. And neither was pressed as vigorously in the conference. This is not to say, however, that they were considered unimportant. The workers' group strongly urged their adoption, and in each case this position was supported by a number of governments, including the American, and by the American employers' representatives. In both cases, the conference decided not to extend the debates over a 2-year period, but to proceed to a final debate and vote upon them. The conference referred each to the usual tripartite committee, and after considerable debate, each of these favorably reported an amended draft of a convention.

In the printing committee, as in textiles, the problem arose of providing an alternative to the averaging of weeks, as a device to provide

flexibility of application. In this committee, also, it was met with permission for additional overtime that was considered to provide approximate equivalence between a country using a flat 40-hour week and one making use of the permission to average hours over a long period.

The committee debated at length the desirability of permitting the enforcement of the convention standards for some workers by collective agreements rather than through national legislation. The committee considered, however, that the universal legal enforcement of a minimum standard was the more desirable basis for international stabilization. Therefore, it voted to delete the articles proposed by the Office, which would have allowed permissive exceptions from a legislative 40-hour week.

When the printing convention finally came before the conference, the employers and governments in opposition were the same ones who had voted against the textile convention. Again delegates and their advisers representing the same governments, workers, and employers urged adoption. However, the number of government delegates supporting this convention dropped to 34 from the 51 supporting the textile convention, and as a result the final vote of 72 to 43 was 14 short of the two-thirds majority required for final adoption.

Like the printing industry, the chemical industry had been the subject of a preliminary conference that had concentrated its discussions on the definition of its limits. In this case, the issue was exceedingly difficult to resolve, as the practice varies quite widely between different countries. However, the Office had finally submitted to the conference a draft convention embodying the results of these earlier deliberations, and after some discussion the committee accepted them without substantial modification.

When a favorable committee report on the chemical convention came before the full conference, it was supported by representatives of the workers and of the American and French Governments, and opposed by the spokesmen of most of the employers and by the British Government delegate. On the final count, it also had less government support than had the textile convention, and with the support of only 39 government delegates, the final vote of 76 to 42 was 8 short of that necessary for final adoption.

Program for Advance Planning of Public Works

Of the projects whose support was based in part on the hope that they would assist in the reduction of unemployment, the I. L. O. had until this year concentrated upon the lowering of hours. The 1937 conference had before it not only a continuation of the hours debate, but also a different approach to cyclical unemployment, that of the advance planning of public works.

The Office had drafted a series of two recommendations and one resolution, providing for a triple approach to the subject. One recommendation proposed that each nation set up an agency to plan its future public works and to delay a substantial amount of such work until periods of widespread unemployment. A second recommended that each nation submit annually a report on its public works activities, the extent of its advanced planning, and how these plans were being carried out. Finally, the Office proposed that the I. L. O. establish a continuing committee to consider these reports from governments, to issue summary reports of such national action, and to recommend how the whole program could be made more effective both nationally and internationally.

The conference committee to which this subject was assigned carried on an extensive and analytical debate, in which representatives of employers as well as of governments and workers participated. Numerous amendments to the Office texts were proposed and several were adopted. These deliberations demonstrated a general acceptance of the basic policy, and showed a desire to clarify the program both as to the kinds of projects to which it would be applied, and the means of their financing. On the first point, the debate made it clear that the committee considered that the term "public works" included not only physical production, but all other kinds of government expenditures as well. Further, the committee debate made it clear that it was considering the planning of the regular programs of governments rather than emergency relief works. On the motion of the American employers' representative, it also adopted an amendment recommending that the kinds of public works be varied in different periods of the business cycle, thus emphasizing the desirability of extensive capital construction at the time when the heavy-goods industries required stimulation, and of projects with a high proportion of labor costs when it was most important to increase the purchasing power of consumers.

The committee also discussed at length the problem of government financing. Emphasis was placed on the desirability of an extensive use of borrowing during depressions, and the repayment of such loans during prosperity, with a recourse at that time to increased taxation if necessary. The problem of financing, the Polish Government delegate pointed out, also might have to be viewed internationally, and he proposed an additional resolution recommending the study of an international system of the financing of public works. However, it was withdrawn when it became clear that there was no agreement in the committee concerning such a project.

When the two recommendations and the resolution came before the full conference, they were vigorously supported by representatives of several governments including that of the United States, by spokesmen for the entire workers' group, and by several employers' repre-

representatives, including the American. No opposition was expressed to the general principle and all three proposals were passed without a negative vote. It cannot be assumed that such apparent unanimity indicates that the program is so well accepted that debate upon it was useless and I. L. O. consideration of it unimportant. As yet, very few nations have undertaken extensive experiments in this direction, and in many countries the idea is just beginning to win adherents. Reluctance to accept the program was expressed by the qualified and rather skeptical endorsement of some employer and government representatives and by the abstention, in the final voting, of the British, Japanese, and Indian Governments.

Increase of Industrial Minimum Age from 14 to 15 Years

In many countries of the world, 14 years has been established as the minimum age for admittance to industrial employment. An international labor convention embodying this standard, which had been adopted in 1919, has been ratified by 27 governments. Only a few countries, on the other hand, have increased the minimum age beyond 14. Therefore, when it came to this item, the conference was given the opportunity to set a higher minimum to serve as a new legislative objective.

The opening speeches in this committee made it quite clear that its supporters considered that a higher age minimum would favorably affect unemployment, but that their dominant concern was the welfare of young persons. National ratifications of the revision, it was also demonstrated, will depend upon improvement in the school facilities, for most nations with 14-year laws have school facilities for only a very small proportion of the older children, and are unwilling to bar them from employment until educational opportunities are available.

The long discussion of the details of application ended with decisions reached by close votes. Each, it should be noted, improved on the original 1919 convention. One amendment, that was voted down, would have permitted any 14-year-old to work if the governmental authority found such work to be "beneficial" for him. The committee adopted an article that required registration of all young persons up to 18 years of age, in order to facilitate enforcement. Another required the government to fix a higher age minimum for dangerous occupations.

The earlier convention had permitted lower age limits for Japan, China, and India. After a long debate, the committee adopted formulas that raised these minima, in order to set a practical next objective for legislation in those countries. For Japan, the minimum was set at 14 for all but family undertakings; for India, levels of 12, 14, and 15 for different kinds of occupations; and for China, minima of 12 and 15. An additional article will permit later sessions of the conference to reconsider these levels without changing the whole

convention, whenever it appears possible to set higher limits for any of these nations.

In the full conference, the committee report was supported by the United States and several other government representatives, and by the representatives of both general and Catholic workers' groups. It was opposed by several employers' representatives, but supported by the American. Since the final vote of 98 to 18 was substantially more than two-thirds, the revised convention was adopted. In this voting, 31 governments voted favorably and none was opposed; the workers' group was unanimously in favor, but the employers' group was divided, with 5 affirmative votes, 18 negative ones, and 13 abstentions.

The committee had also drawn a recommendation which urged governments to include family employment in their present regulations. In a division paralleling the earlier vote, this was adopted by 82 to 18.

Raising of Nonindustrial Minimum Age

Even more uncertainty attached to the possibility of conference revision of the nonindustrial 14-year minimum-age convention, controlling commercial and miscellaneous occupations. It had been adopted only in 1932, and had been ratified by only six nations. Many governments had in fact replied to an Office questionnaire that they were opposed to such action. Indeed, in the committee, one government representative moved that the whole debate be postponed and the question referred back to the Governing Body. Only by a close vote was this motion defeated.

The committee debate followed much the same course as that referred to above for industrial employment. A motion to approve an article permitting a lower age for beneficial employment was defeated; another requiring the registration of older children was adopted. The committee accepted an article permitting children above 13 to engage in light work outside of school hours, and revised upward the lower minimum granted to India.

The conference debate largely reproduced that described on industrial employment. Although support was less vigorous, the revised convention secured a final vote of 81 to 22, and thus was adopted. In this vote, it had received the support of 23 governments, all the workers, and 4 employers.

Action on Safety in Building

An international convention setting standards of safety during the construction and repair of buildings had been urged by the international organization of building workers. The tentative Office draft of a convention set forth the general principles for safety in such work. A much more elaborate series of specific proposals for the

application of this general standard was then embodied in a recommendation. The committee of the conference carefully debated both drafts, considered many amendments, and adopted a final text unanimously. The affirmative votes upon all the proposals demonstrated that although in this field there is no international competition, there is a reasonable basis for agreement between nations on a standard to be applied for building workers.

Conference Resolutions

The most significant resolution gave rise to an important debate. It was introduced by the two leaders of the workers' group, M. Jouhaux of France and M. Mertens of Belgium. It called for reconsideration of the plan of separate 40-hour conventions for each industry, and urged a new attempt to frame and pass a general 40-hour convention for all industry not covered by separate conventions. In explanation, the workers' representatives said that they were thoroughly dissatisfied with the length of time and the uncertainty involved in the attempt to adopt many specialized conventions. This position was opposed by the leaders of the employers' group, but was supported by the American Government and employer delegates, the latter, however, making the important qualification that such a convention would have to be confined to the basic industries and permit of considerable flexibility and of variation between countries. The resolution was adopted by the large majority of 66 to 39.

The conference therefore took a step in two different, but not necessarily contradictory, directions. By the adoption of a textile convention, it proceeded with the adoption of specific drafts drawn with a view to the special problems of a single industry. By the adoption of the resolution, it recommended an effort in the direction of an all-inclusive, but generalized, draft. It will be for the Governing Body and later the conference to determine in which direction to follow up the work of this last session.

Other resolutions the conference passed without great debate. Of this group perhaps the most significant for Americans was a resolution introduced by the United States Government delegates. It urged governments to consider steps looking toward the removal of social and political discrimination against woman workers, the acceptance of their right to receive equal remuneration for equal work, and the extension of special legislative protection against physically harmful conditions of employment and economic exploitation. Another resolution noted the separation of Burma from India, and drew from the British Government delegate a pledge that Burma would consider with the British Government the application of future I. L. O. conventions. Another urged a reconsideration of the exemption given foreigners from the operation of Chinese labor laws, in order to remove an

opportunity for unfair competition in Chinese soil. Others dealt with the extension of social insurance protection to migrants and called attention to a number of problems of colonial native populations which had not yet been dealt with by the I. L. O. and to the failure of some governments to enforce some of the conventions which they have ratified.

Triennial Governing Body Elections

Once every 3 years the delegates to the conference are called upon to select members of the Governing Body. These elections are important, for the Governing Body is the executive board of the Organization, in its quarterly meetings directing the work of the permanent staff, selecting items for the action of future sessions of the conference, and passing on the finances of the Organization. In many other ways it acts as the executive arm of the Organization. For this election, separate meetings are held by each of the three groups. The government group meeting is attended by the delegates of all member countries, with the exception of the eight industrially most important whose appointees are automatically permanent members of the Governing Body. In the worker and employer group meetings, each accredited delegate is empowered to vote. Including the eight permanent members, the membership of the Governing Body for the term 1937-40 is as follows:

Members of I. L. O. Governing Body for Period 1937 to 1940

Government group		Employer group	Worker group
Permanent seats	Elected seats		
United States of America	Brazil	M. Curcin (Yugoslavia)	Mr. Anderson (Sweden)
Great Britain	Chile	M. Erulkar (India)	M. Caballero (Spain)
France	China	Mr. Forbes-Watson (Great Britain)	Mr. Hallsworth (Great Britain)
Union of Soviet Socialist Republics	Mexico	Mr. Gemmill (South Africa)	Mr. Joshi (India)
Italy	Norway	Mr. Harriman (United States of America)	M. Jouhaux (France)
Japan	Poland	M. Lambert-Ribot (France)	M. Mertens (Belgium)
Canada	Spain	M. Oersted (Denmark)	Mr. Watt (United States of America)
India	Yugoslavia	M. Olivetti (Italy)	Mr. Yonekubo (Japan)

Substitutes were also elected by both the employers' and workers' groups.

Credentials

Each year the credentials of one or more delegates have been contested during the conference session. This year, nine credentials were protested and six were formally challenged. Representatives of the dominant trade-unions of democratic countries challenged the credentials of worker delegates from five countries, who, they alleged,

were fascists and therefore could not independently represent workers because they were under the control of their governments. The other formal challenge was presented against the communist worker delegate from Russia, by the Christian trade-union leader also making the charge of Government domination. None of these challenges was sustained by the conference, however, for most government representatives were unwilling to invalidate the credentials issued by another government. A protest was lodged also against the propriety of the appointment of a Russian "employers'" representative, by the employers' group, but they elected not to present a formal challenge of his credentials. Instead, upon the employers' motion, the conference was asked to refer the matter to the Governing Body for further consideration.

Social Security

REVISION OF DANISH UNEMPLOYMENT INSURANCE LAW, 1937

THE DANISH system of unemployment insurance is based on the unemployment funds maintained by the trade-unions. The system dates from 1907 when State contributions for unemployment relief were first authorized, and several laws amending the system have been enacted, the latest having been passed March 31, 1937.¹

There is practically complete trade-union organization of urban workers in Denmark, and, as in recent years legislation has strongly favored the trade-unions and their unemployment funds, the membership has increased from 350,000 in 1932 to more than 450,000 in 1937. Danish employers are also organized in an association which is recognized by law, and agreements covering wages and working conditions are concluded annually between the unions and the association. All trade-unions, with the exception of a few trades with very high average earnings, have unemployment funds subsidized by the Government. There are at present 70 such funds, most of them with many subdivisions. Each fund, with one unimportant exception, includes members of a single trade. The membership in a fund may not be less than 100 persons and is usually many thousands.

Provisions of Unemployment Compensation Act

Wage workers of all kinds between the ages of 18 and 60 are eligible to be admitted to membership in unemployment funds if their liquid capital does not exceed 8,000 kroner, if single, and 12,000 kroner, if married. When the capital is not liquid the limits are raised to 12,000 kroner and 18,000 kroner, respectively. These amounts are increases of 2,000 kroner to 4,000 kroner over the limits fixed by the law passed in May 1933. Membership in unemployment funds is restricted to persons who are able and willing to work, who are not receiving public support, and who at the time of application for membership are occupied in the trade for which the fund was established.

Members of the unemployment funds must have paid dues for 1 year in order to be entitled to benefits, and are disqualified if they are on strike or out of work on account of a declared lock-out, or if, within a period of 8 weeks, they have been occupied for 3 weeks or more in

¹ Data are from report by E. Gjessing, American Vice Consul, Copenhagen, May 12, 1937.

a shop or place affected by a labor dispute. Under the law of 1933 no benefits were payable to persons whose working time was two-thirds of normal, but under the present law relief may be granted in such cases although it must be so regulated that the worker will be economically interested in obtaining regular work.

Contributions.—The unemployment funds are maintained by the fees paid by members and by contributions by the State. The amount of the membership fee is fixed by the management of the unemployment fund and must be so adjusted that it together with the State contribution will be sufficient to yield the benefits provided for by the fund and to provide sufficient reserves. Additional assessments may be levied if required to meet the obligations of the fund. The resources of the fund may not be used for loans to other organizations or for any purpose other than that for which the fund was created. The State contribution amounts to a certain percentage of the membership contributions during the previous fiscal year, and ranges from 90 percent of the contribution paid on average earnings of 2,000 kroner or less for workers in the trade or district to 15 percent for average earnings over 4,000 kroner. This rate is in effect only for funds which have an established emergency fund and is reduced 10 percent for other funds. If the average percentage of unemployment during the year exceeds 20 percent or has exceeded the normal degree of unemployment of the fund by 20 percent, the State contributions are increased 10 percent. A third of the State contribution is refunded to the State by the communes.

A central unemployment fund was created in 1921 which was to be maintained by contributions of employers who are required to insure their workers under the workmen's compensation law and by the State. It was to be used to relieve distress during periods of extraordinary unemployment, to advance money for projects to provide employment, and to provide for the training of young persons out of work. Large appropriations were made to this fund when it was started and employers were assessed 9 kroner per year per worker. The unemployment funds were to contribute 5 percent of the membership fees annually. It was the purpose to build the fund up to a total of 50,000,000 kroner but this amount was never reached and in 1924 the contributions were materially reduced. In 1932 the annual contribution by employers was fixed at 3 kroner per worker and in 1933 was raised to 4.50 kroner. The present law provides that the employer's contribution shall be 15 kroner per year per worker insured against accident, 2 kroner per year for apprentices during the first 2 years of apprenticeship under a contract, and 3 kroner per year for agricultural laborers, lumbermen, and fishermen. For the first two workers in any shop or undertaking the contributions will be 7.50 kroner per worker engaged for a whole year instead of 15 kroner. When the amount in the central fund reaches 12,000,000

kroner, the contributions by the employers and by the State will cease at the end of the fiscal year during which that amount is reached. The employers' contributions will be resumed when the amount in the fund has fallen to 10,000,000 kroner. The State contribution to the central fund is equal to one-half its expenditures, including contributions to the emergency fund; to unemployment funds which are not recognized by the State but which pay out support to their members equivalent to that paid by recognized funds and which follow the rules laid down for such funds; for works started for the purpose of relieving unemployment; and for vocational training for unemployed persons.

Emergency funds.—The establishment of emergency funds was first authorized by the law of 1927 but only six such funds were established prior to 1932. All unemployment funds now have emergency funds. These funds are used to provide support during periods of extraordinary unemployment for days in excess of the days of ordinary support. The contributions to the emergency funds are made according to the same rules as those for the unemployment funds. The membership fees must be at least 20 percent of the fees paid to the unemployment funds, unless the Director of the Labor Bureau approves of a lower fee, and the State contributions are in the same proportion. At the end of the fiscal year the central fund contributes half the expenses of the emergency funds for the year. The law of 1933 provided that if the percentage of unemployment among the members of a fund during the 2 previous months had been 70 percent above normal, and the normal unemployment was 7 percent or less, the emergency funds should begin to operate. The law of March 1937 provides that if during the previous 12 months unemployment has been unusually great for 4 months, or during the previous 24 months for 8 months, and the unemployment percentage is 60 percent above normal with normal unemployment of 7 percent or less, the funds may begin to operate. It is stipulated, however, that the percentage of unemployment must exceed 5 percent. For every point by which the normal percentages of unemployment exceeds 7, the additional percentage of 60 is reduced by 2 points until a minimum of 20 percent is reached. For example, if the normal percentage of unemployment is 7 percent, the actual percentage in order that the emergency funds may be drawn on must be 60 percent above, or 11.2 percent; if 8 or 10 percent the actual percentage must be 58 or 54 percent above, or 12.6 or 15.4 percent, respectively. Under the present law, also, emergency funds may be used for relief when 30 percent of the members out of work (formerly 40 percent) have exhausted the support that can be granted them from the regular unemployment funds, or when 40 percent (formerly 50 percent) of the members of the funds are out of work.

Benefits.—Unemployment relief may be paid in the form of daily cash benefits, moving or travel allowances, and special support at

Christmas. The daily benefit may not exceed two-thirds of average earnings, with a maximum of 4 kroner for heads of families or persons with dependents and 3 kroner for single persons, unless members of the latter class have been members of a fund in good standing for 8 years, in which case the benefit is 3.50 kroner per day. One-third of the amount of benefit is regulated, however, according to the official price index issued on April 1 each year, and in May 1937 the daily benefits were 4.30 kroner, 3.20 kroner, and 3.80 kroner, respectively.

The present law does not prescribe the maximum period for which regular benefits may be granted but does provide that the minimum period may not be less than 90 days in 1 year. The maximum benefit period is fixed at 140 days by 66 funds, 150 days by 3 funds, and 160 days by 1 fund. The law fixes the maximum benefit period for emergency funds at 140 days. It is possible, therefore, for a member of an unemployment fund to receive benefits for a maximum of 280 to 300 days in a year. The law of 1933 provided that a member of an unemployment fund who had received maximum support for 4 consecutive years should be debarred from further assistance. Under the present law the period may be extended to 5 years if the Minister of Social Affairs so decides, after which there is a waiting period of 12 months. Eligibility for benefit depends upon a certain minimum amount of employment which is fixed at 26 or 39 weeks within 3 or 4 years, respectively, or which may in some cases be extended to 5 years during which there must have been 52 weeks' employment. The different funds may choose the employment periods which they will require of their members.

Benefits are not paid for the first 6 days of unemployment, and this waiting period may be extended in certain cases to 15 days. If the benefit is in the form of traveling expenses the waiting period may be reduced or such expenses may be paid immediately. In case of temporary work being secured, if it does not last longer than 3 weeks the period prior to and subsequent to the temporary job is regarded as the same waiting period. For members of an unemployment fund which mainly includes seasonal workers, the Minister of Social Affairs, after conference with the Labor Bureau, shall stipulate that unemployment support is not to be given them at periods of the year when unemployment regularly occurs, or that support is first to be given after the unemployment period has exceeded 6 days.

Administration.—The same machinery of administration is maintained as under previous laws. The Minister of Social Affairs has been given wide latitude in the application of the law. In his decisions he depends on the recommendations of the Director of the Labor Bureau who is the actual administrative official. The Director's decisions as to whether a person is qualified to become a member of an unemployment fund or is to be excluded for violation of the law, or is to lose his right to support for a time, may be appealed, within a month, to the

Labor Bureau. All other decisions of the Director may be appealed, within the same period of time, to the Minister of Social Affairs, whose decision is final. If the decisions of members of the Labor Bureau are unanimous, they may not be appealed, if not unanimous, appeal may be made to the Minister of Social Affairs.

Public Employment Offices

Public employment offices are established in towns specially selected by the Minister of Social Affairs for every county in Denmark, with the exception of the four counties in the Province of South Jutland where there will be one principal office, and Copenhagen and the municipality of Frederiksberg for which there will be one office. There are at present 29 such offices that assign people to work in industries or trades, transportation, and commerce. Private employment offices are restricted to the field of domestic service. The earlier laws provided that employment offices could not be established in towns of fewer than 10,000 inhabitants or where the average annual assignments were fewer than 1,000, but under the law of March 1937 these offices may be established for several communes which together have a population of 10,000 or where there have been an average of 600 assignments to work annually or where the assignments have been at least 300. All employment offices outside of Copenhagen are managed by a board consisting of a president and two members, of whom one should be an employer and the other a wage earner. The members of the board are chosen by the municipal council in the commune where the office is located. The office in Copenhagen has a board of seven members, one employer and one wage earner representing the municipality of Frederiksberg. The president of a board, or his substitute, may not be either an employer or a wage earner and the appointment of these officers must be approved by the Minister of Social Affairs. The members of the boards receive no compensation except for the time lost at meetings. The State pays one-third of the costs of operation of the employment offices while two-thirds are borne by the district or districts operating the office. As soon as a member of a trade-union or an unemployment fund is out of work this fact must be reported to the nearest employment office. This office, which has a list of all vacancies in the district, thereupon notifies, in writing, the employer who has a vacancy which can be filled by the unemployed. If the person is not engaged because the vacancy has already been filled, or if he immediately after securing the position quits the job, the employer must, under penalty of a fine, so advise the employment office, and this office must in turn advise the unemployment fund. If, on the other hand, the applicant for employment obtains a job on his own initiative, the management of the unemployment fund to which he belongs must at once notify the employment office and so must the employer.

Operation of the Unemployment-Insurance System

The law of March 31, 1937, widens the scope of the unemployment-insurance system, by extending the rights of members to receive benefits, lengthening the maximum time that benefits may be granted, and improving the precarious financial conditions of the central fund through increased contributions by the employers and the State. Contributions by employers, it was estimated, would increase from 2,400,000 kroner under the old law to 6,900,000 kroner, the State contribution would increase from 4,170,000 kroner to 5,775,000 kroner while the increased State contributions to unemployment and emergency funds would amount to 3,226,000 kroner, and increased membership fees to 2,674,000 kroner, making a total increase of 12,005,000 kroner.

The following table shows the income and expenditures of the regular unemployment funds and the emergency funds for the years 1933-34, 1934-35, and 1935-36.

Income and Expenditures of Unemployment Funds in Denmark, 1933-34 to 1935-36

Item	1933-34	1934-35	1935-36
Regular unemployment funds			
Income:	<i>Kroner</i>	<i>Kroner</i>	<i>Kroner</i>
Members' contributions.....	30,205,800	30,034,300	29,066,800
Fines and dues.....	232,700	67,200	56,700
State contributions.....	24,226,700	25,493,000	24,198,200
Municipal contributions.....	¹ 3,874,000	903,000	2,300
Interest.....	729,800	1,059,100	1,427,300
Other income.....	37,800	271,400	109,800
Total income.....	59,306,800	57,828,000	54,861,100
Expenditures:			
Day payments and other support.....	34,870,100	34,194,900	40,530,600
Assignment of work and administration.....	2,518,100	2,902,600	3,028,700
Interest.....	552,000	415,200	7,100
Exemptions from contribution.....	1,090,600	668,600	474,900
Other expenses.....	1,100	163,200	4,800
Total expenditures.....	39,031,900	38,344,500	44,046,100
Balance.....	20,274,900	19,483,500	10,815,000
Emergency funds			
Income:			
Members' contributions.....	5,639,300	6,538,100	7,324,200
State contributions.....	1,967,600	4,670,400	5,318,400
Central fund.....	² 14,242,600	6,160,500	7,513,900
Interest.....	144,200	218,200	347,100
Other income.....	119,700	300,400	8,300
Total income.....	22,113,400	17,887,600	20,511,900
Expenditures:			
Unemployment relief.....	13,067,000	12,321,000	15,027,700
Exemptions from fees.....	225,600	141,400	124,000
Other exemptions.....	22,900	257,700	1,800
Total expenditures.....	13,315,500	12,720,100	15,153,500
Balance.....	8,797,900	5,167,500	5,358,400

¹ Paid a year after due.

² Includes the initial contribution of 25 kroner per member, totaling more than 7,000,000 kroner.

The balance in the regular unemployment-insurance funds on March 31, 1936, amounted to 57,282,892 kroner, and in the emergency funds to 22,522,609 kroner, or a total of 79,805,501 kroner—an average of 196 kroner per member. It was estimated that the funds would amount to about 92,000,000 kroner at the end of March 1937. The capital in the central fund amounted to less than 4,000,000 kroner on March 31, 1932, and the payments from the fund to relieve extraordinary unemployment according to the law of October 19, 1931, were so heavy that the fund was 7,521,000 kroner in arrears on March 31, 1933. On March 31, 1936, however the amount in the fund was 14,480,000 kroner. The increased contributions by the State and by employers amounting to more than 9,000,000 kroner annually will soon, it is considered, restore the solvency of the central fund.



REVISED SCALE OF UNEMPLOYMENT-INSURANCE BENEFITS IN GERMANY¹

A NEW schedule of unemployment benefits was put into effect in Germany, June 28, 1937. The new rates² carry increases in the amount of benefits, particularly affecting the higher wage classes and the allowances for children. The eleven wage classes into which the workers were divided for the assessment of contributions and the payment of benefits are retained in the new schedule as are, also, the differences in benefit rates based on population groups. The revised table of benefits, it is stated, marks a return to the insurance principles of the original system which had been abandoned during the depression years for a system amounting to welfare relief. The order establishing the new rates of benefits states that unemployment insurance may be paid for 36 days, after which further payments are dependent on a rigid means test. The total amount of the benefits, including the supplementary payments for dependents, may not exceed 80 percent of the wage which the unemployed person has been earning. There are certain exemptions, however, of which the most important is the provision that workers in classes I to III who have at least one dependent may receive payments not to exceed the full amount of their wage classification instead of the 80 percent.

The following tables show the schedules of unemployment benefits effective under the decree of June 16, 1932, and under the decree of June 3, 1937. Although a comparison of the tables indicates that the

¹ Data are from report by Henry P. Leverich, American vice consul, and C. Schenke, of the staff of the consulate general, Berlin, June 12, 1937.

² For articles on the German unemployment-insurance system, see *Monthly Labor Review*, January 1933, p. 50, and August 1934, p. 301.

increases in the new schedule are about equal in all wage classes, as a matter of fact there are only slight increases in the lower wage levels. The reason for this lies in the fact that by an order dated October 19, 1932, supplementary payments were made to unemployed persons in the first six wage groups who had at least one dependent. These supplementary payments amounted to 2 marks per week for one or two dependents, 3 marks for three or four dependents and 4 marks for more than four dependents. For example, an unemployed person with two dependents in wage group V, municipal class A, formerly drew 12 marks per week in regular benefit, whereas in the future he will be entitled to receive 14.40 marks. These amounts include in the first case 3.60 marks and in the second case 5.70 marks for the two dependents. However, under the October 1932 decree he received an additional 2 marks for these dependents, bringing his total weekly benefit to 14 marks, as compared with the 14.40 marks under the present scale. Somewhat greater increases are provided for workers or employees in the higher wage classes. Thus, an employee with three dependents who had received a salary of 300 marks a month (class XI) would, under the former scale, have received a weekly benefit of 19.80 marks per week and under the present scale will receive 21 marks a week. The new schedules provide for more favorable treatment for families with children. Formerly a flat amount was paid for each child and in some of the lower classes no benefits were paid beyond the first, second, or third child; but the payments for the first three children are graduated according to theoretical needs under the present law and there is a flat rate for children beyond this number.

Schedule of Weekly Unemployment-Insurance Benefits in Germany, 1932 and 1937

Wage group	In towns of municipal "Class A" and towns with 50,000 inhabitants and over				In towns of municipal "Class B" with not over 50,000 inhabitants and towns of classes C to E with over 10,000 to 50,000 inhabitants				In towns of municipal classes C to E with 10,000 inhabitants and under			
	Basic benefit	Weekly allowance for each dependent			Basic benefit	Weekly allowance for each dependent			Basic benefit	Weekly allowance for each dependent		
		First	Second	Third and over		First	Second	Third and over		First	Second	Third and over
	Decree of June 16, 1932											
Class I ¹	Marks 5.10	Marks 1.50	Marks 1.50	Marks 1.50	Marks 5.10	Marks 1.50	Marks 1.50	Marks 1.50	Marks 4.50	Marks 1.20	Marks 1.20	Marks 1.20
Class II ²	6.00	1.50	1.50	1.50	6.00	1.50	1.50	1.50	4.50	1.20	1.20	1.20
Class III ²	7.20	1.80	1.80	1.80	6.00	1.50	1.50	1.50	5.10	1.50	1.50	1.50
Class IV ³	8.40	1.80	1.80	1.80	7.20	1.80	1.80	1.80	6.00	1.50	1.50	1.50
Class V ⁴	8.40	1.80	1.80	1.80	7.20	1.80	1.80	1.80	6.00	1.50	1.50	1.50
Class VI.....	8.40	1.80	1.80	1.80	7.20	1.80	1.80	1.80	6.00	1.50	1.50	1.50
Class VII.....	9.90	2.40	2.40	2.40	8.40	1.80	1.80	1.80	7.20	1.80	1.80	1.80
Class VIII.....	9.90	2.40	2.40	2.40	8.40	1.80	1.80	1.80	7.20	1.80	1.80	1.80
Class IX.....	11.70	2.70	2.70	2.70	9.90	2.40	2.40	2.40	7.20	1.80	1.80	1.80
Class X.....	11.70	2.70	2.70	2.70	9.90	2.40	2.40	2.40	8.40	1.80	1.80	1.80
Class XI.....	11.70	2.70	2.70	2.70	9.90	2.40	2.40	2.40	8.40	1.80	1.80	1.80
	Decree of June 3, 1937											
Class I.....	5.10	3.30	1.80	2.10	5.10	3.30	1.80	2.10	4.50	3.30	1.50	1.80
Class II.....	6.30	3.30	1.80	2.10	6.00	3.30	1.80	2.10	4.80	3.30	1.50	1.80
Class III.....	7.50	3.60	2.10	2.40	6.30	3.60	2.10	2.40	5.40	3.30	1.80	2.10
Class IV.....	8.40	3.60	2.10	2.40	7.20	3.60	2.10	2.40	6.00	3.30	1.80	2.10
Class V.....	8.70	3.60	2.10	2.40	7.50	3.60	2.10	2.40	6.30	3.30	1.80	2.10
Class VI.....	9.00	3.60	2.10	2.40	7.80	3.60	2.10	2.40	6.60	3.30	1.80	2.10
Class VII.....	9.30	3.60	2.10	2.40	8.10	3.60	2.10	2.40	6.90	3.30	1.80	2.10
Class VIII.....	9.60	3.60	2.10	2.40	8.40	3.60	2.10	2.40	7.20	3.30	1.80	2.10
Class IX.....	11.10	3.60	2.40	2.70	9.60	3.60	2.10	2.40	7.50	3.30	1.80	2.10
Class X.....	11.70	3.60	2.40	2.70	9.90	3.60	2.10	2.40	8.10	3.30	1.80	2.10
Class XI.....	12.30	3.60	2.40	2.70	10.20	3.60	2.10	2.40	8.40	3.30	1.80	2.10

¹ Allowance for 1 dependent only.² Allowance for 3 dependents only.³ Allowance for 4 dependents only.⁴ Allowance for 5 dependents only.

Employment Conditions

EMPLOYMENT AND LIVELIHOOD FROM SMALL-SCALE PLACER MINES IN 1935

IN A RECENT study of gold placer mining as a means of mitigating unemployment¹ the conclusion is reached that this field offers little economic security, and with some exceptions falls short of providing reasonable minimum standards of living. The study was carried on through a cooperative arrangement between the Works Progress Administration and the Bureau of Mines, and presents the first comprehensive data on employment and production in small-scale placer mining in the United States.

During the depression many of the jobless migrated to gold fields in California and other Western States, in quest of a livelihood. This movement increased as rumors multiplied that gold was being recovered, and as its price rose to \$35 per ounce. In 1935 more than 28,000 persons were engaged in small-scale placer mining in the United States—a working force almost double that required for iron-ore mining in the same period, and more than triple the number required to mine the copper in the United States in 1934. The average number of days worked during the year by the 28,000 miners, each of whom made at least one sale to a bullion purchaser, was 45. The miners' average daily gross income for the 45 days was \$1.60, and the average gross income for the year from this source was \$72. An unknown number of those who undertook placer mining found no gold at all. These figures indicate that no serious consideration should be given to the reiterated proposal that large groups of the jobless be transferred to the western gold fields in the hope that these people might become economically self-sufficient.

Employment and Production

The following table shows the variations in number of days worked and the average gross value of gold produced per miner in different States in 1935.

¹ United States Works Progress Administration. Mines as a Source of Gold, Employment, and Livelihood in 1935, by Charles White Merrill, Charles W. Henderson, and E. E. Kiessling. Philadelphia, May 1937.

*Summary of Small-Scale Gold Placer Operations in the United States in 1935,
by States*

State	Employment		Gold produced		
	Reported number of miners working	Average number of days worked	Fine ounces	Value	Average gross value per miner ¹
Pacific Coast States:					
California.....	19,463	40	29,516.95	\$1,033,093	\$53
Oregon.....	3,229	37	4,020.86	140,730	44
Washington.....	250	89	1,547.60	54,166	² 217
Rocky Mountain States:					
Colorado.....	1,047	60	4,379.74	153,291	146
Idaho.....	1,314	85	8,134.07	284,692	² 217
Arizona.....	1,184	42	2,492.12	87,224	74
Montana.....	711	101	4,586.48	160,527	² 226
New Mexico.....	233	55	801.17	28,041	³ 120
South Dakota.....	214	60	491.43	17,200	80
Nevada.....	130	73	829.00	29,015	² 223
Utah.....	41	89	255.80	8,953	² 218
Wyoming.....	38	74	142.04	4,971	131
Southern Appalachian States (Georgia, Virginia, North Carolina, South Carolina, Alabama).....	168	60	360.00	12,600	75
Total.....	28,022	45	57,557.26	2,014,503	72

¹ Determined by dividing the value of the gold by the number of miners to indicate the maximum possible average annual income per miner.

² In such States as Washington, Idaho, Montana, Nevada, and Utah, there were some miners who worked either for a percentage of the yield or for wages paid by small operator-owners, and for these States the average gross value of gold per man ex-

ceeds the average return actually received by the miner by an amount greater than the deductions made from the quoted value of gold when selling small quantities.

³ Exceeds the average per worker engaged, as the heads of Mexican families usually reported as their own output the gold produced by the efforts of the entire family.

The climatic and water conditions, as well as the freedom of men with no supervision to follow their personal inclinations, apparently tended to reduce the number of days worked by an individual to a small percentage of the time he spent in the placer districts.

As shown by detailed studies for California and Oregon, the placer miners can be classified into two groups: One group, comprising a small portion of the total number, represented those who worked at placer mining more or less steadily, and a second group comprised the remaining miners who were principally itinerants and who worked at the diggings for only very short periods. The vastly greater number of men in the latter group reduced the average working time for all the miners so that it does not accurately reflect the continuous effort made by the smaller number of miners who worked more or less steadily at placering.

Approximately one-third of a group of relatively successful small operators were found to have had recourse to public relief between 1933 and 1936. Even a larger proportion of the total number of miners probably were dependent in part upon relief.

Even though a miner produced some gold and reported his operation to the Government, this still does not eliminate a second possibility of undercounting the amount of labor required to produce the metal. Observations in the placering areas indicated that frequently one man reported the production from an operation under his own name only, although he may have had one or two helpers. Furthermore, a single deposit of gold was frequently made by the head of a family and reported as the result of his own efforts, whereas children and relatives actually aided in the production. This was particularly true in areas where placer-

ing was done by Mexican families and where the efforts of the entire family were utilized by the head of the household.

The financial situation of the small placer miners is so precarious that, without the selling of very small amounts of gold at close intervals to accessible purchasers, the operators would be unable to buy the necessities of life. The bullion purchasers, scattered through the towns, villages, and hamlets in the gold-mining districts, therefore occupy a position of importance in the industry.

In California between 150 and 200 persons have licenses to buy gold. These purchasers are mainly merchants whose chief business is general merchandising. Banks, assay offices, precious-metal refineries, and jewelry stores are among the other establishments that buy gold. While it is not possible to arrive at a precise average figure representing what the small placer miner gets for his fine gold, it is estimated that he is paid on the average approximately 90 percent of the gross value of his product.

Notwithstanding the intensive quest for "pay dirt", the contribution of small-scale placer operators to the gold output in the United States has been very small, and in 1935 was less than 2 percent of the total production.

Living Conditions

Although the small placer miner's income is low, he finds many aspects of his life alluring. It costs little to live in the hills. Food, gasoline, tobacco, and a few other items are the only expenses. Rent is eliminated by building cabins of logs and refuse material. Fuel for cooking and heating is gathered from the woods, water is available from the streams, work can be done by daylight so that lights can be dispensed with, and clothing costs next to nothing. The cheap living seems to have had an appeal, aside from the wish to engage in mining.

To labor without supervision and to be able to take a vacation whenever so minded are generally regarded as advantageous by the worker. Moreover, from time to time large nuggets are discovered and the million-to-one chance against the miner's having such luck does not eliminate the hope that his next "clean-up" will be a rich one.

Extent of Mechanization

The mechanization of large-scale gold placer mining, especially the development of the dredge, has made it possible to work many low-grade gravels with profit. It was difficult, however, to ascertain how far the miners in general have taken advantage of modern cheap power in wresting a livelihood from the creeks. It should be recalled, however, that these men and women who took to placering in the depression had little capital at their command.

Field observations on the application of small power units were confined largely to the Pacific Coast States. It was found that most of the power on the creeks

was in the form of automobiles, which were virtually a necessity and brought miners to the gold fields from points as far away from California as Florida, provided rapid transportation, and made it easy to get cheap and adequate supplies even on the more remote creeks. In the actual work itself a number of very small gasoline engines were in service. In most instances, the power was used to pump water to a Long Tom into which the gravel was invariably delivered by hand. Three gravel pumps were found on small dredges. Undoubtedly, cheap power from internal-combustion engines has increased the average gross productivity of the small placer miner, but apparently this was not a dominant factor, as over three-quarters of the miners had no power other than automotive.²

Ages and Former Occupations of Miners

More than 75 percent of the small-scale placer mines and miners were found in the Pacific Coast States, California having approximately 6 times as many migrant gold miners as any other State. In California more than 75 percent of the 139 miners who reported their ages were over 40 years old and approximately one-half were over 50, 24 being between 61 and 70, and 8 being between 71 and 77. The majority of these operators had no dependents.

The small-scale placer operators in California represented a great variety of occupations. Among these miners were an acetylene welder, an adding-machine salesman, an automobile electrician, 4 automobile mechanics, an aviation mechanic, a baker, a bill collector, 3 blacksmiths, a butcher, 13 carpenters, a concrete contractor, a concrete worker, a construction contractor, 2 cooks, a draftsman, a dry cleaner, 7 farmers, a gardener, 7 general mechanics, 6 housewives, 5 structural iron and steel workers, 3 itinerant fruit harvesters, a journalist, 10 laborers, a lather, a locomotive fireman, 7 lumberjacks, a motorcycle mechanic, 2 millwrights, a mining engineer, a mechanical engineer, a navigator, a newspaper circulation manager, 6 oil-field operators (including an oil-well driller and 2 rig builders), a real estate rental agent, a restaurant manager, a shipping clerk, a shoemaker, a sign painter, a steamship engineer, 2 store clerks, a teacher, a tile setter, 2 tool sharpeners, 2 truck drivers, 9 underground metal miners, a waiter, and a water-well driller.

² For a description of small-scale gold-placering devices, see *Elementary Placer Mining in California* and *Notes on the Milling of Gold Ores*, by C. McK.

Laizure and others, in *California Journal of Mines and Geology*, XXX, nos. 2 and 3 (April and July 1934), pp. 121-281.

Prison Labor

OPERATIONS OF PRISON INDUSTRIES REORGANIZATION ADMINISTRATION

STUDY of State penal institutions has led the Prison Industries Reorganization Administration to conclude that there is great need for disinterested advice and leadership in the prison field, and that the States welcome and will respond to action initiated by an appropriate Federal agency.¹ In its progress report of May 1937 the Administration endorses the use of prisoners on road work. Notwithstanding the "unsavory reputation of the old chain gang", the Board believes that such work offers "an extensive opportunity for the wise and constructive use of prisoners of the better types on highway work, and on conservation work such as forestry, drainage, and soil-erosion projects." Arrangements have been made for careful study of the methods used in carrying out this work in different localities and, on the basis of the facts disclosed, it is expected to suggest measures for developing such enterprise under proper safeguards.

An important objective of the Board is to aid in establishing industries and expanding markets for prison-made goods in State institutions, including tax-supported agencies and subdivisions. To this end data have been assembled on industries already in operation for the information and guidance of those States that do not have prison industries. Facts have been analyzed as to size of plants, cost, productivity, and design of industrial plants in penal institutions. Plans for marketing are also being presented and any other useful information obtained is being made available.

It is felt by the Board that educational work in prisons is being neglected or left to such direction as qualified inmates or chaplains can furnish in their spare time. In order to draw attention to educational systems that are being successfully carried out, plans of such systems, where they exist, are being studied.

Investigations of prisons have been initiated by the Administration only on invitation of the respective States. Each State study is a separate research undertaking and at the time the report here reviewed was completed a total of 17 had been made. The jurisdictions are: Arkansas, California, Delaware, District of Columbia, Georgia,

¹ Prison Industries Reorganization Administration. Progress report, May 15, 1937. Washington, 1937.

Recreation

COMMUNITY RECREATION IN THE UNITED STATES, 1936

THE extent to which a general improvement in business conditions during 1936 affected normal recreation activities, as well as the contribution of Federal agencies to such programs, is shown in the annual report¹ of the National Recreation Association. The report does not cover the recreation work carried on solely by the Works Progress Administration authorities during the year, but does include those communities in which the normal recreation services received supplementary funds from emergency sources. In total the report deals with the recreation activities of 1,122 communities with 20,052 leaders employed from regular funds. The number of workers employed on a full-time annual basis was 2,792—a larger number than was reported in any previous year. In addition to the number paid from regular funds, a total of 26,498 leaders were supplied by the Federal authorities, nearly 12,000 of whom were full-time workers. The recreation budgets, which amounted to approximately \$24,000,000, were larger than in the preceding year when approximately \$21,500,000 was spent. Much of the increased expenditure was devoted to the development of new facilities and areas. However, local funds in 475 cities were supplemented by an aggregate sum of \$32,342,000 from emergency sources, and it is pointed out in the report that the fact that the expenditures from emergency sources were greater than those from local sources emphasizes the magnitude of the problem facing local communities should Federal funds be withdrawn or materially curtailed.

There were 9,490 playgrounds conducted under leadership in 1936, as compared with 8,062 in 1935. Of this number 2,121 were reported by 206 cities to be open the year round. The average daily summer attendance of participants and spectators at 6,493 playgrounds was reported as 3,158,907, while the total attendance during periods under leadership reported for 8,402 playgrounds in 581 cities was 320,474,216. The total number of recreation buildings reported for 321 cities was 1,347 (304 more than in the preceding year), with a total yearly or seasonal attendance in 229 cities of 55,170,954. In addition to the

¹ Recreation (New York), June 1937, pp. 123-174.

recreation buildings there were 3,947 structures—schools, churches, city halls, social centers, and other buildings—used as indoor recreation centers, with a total attendance in 306 cities reporting on this point of 30,709,315. Special recreation activities included arts and crafts for children and adults, a large number of athletic sports, dancing, drama, music, outing activities, water sports, special winter sports, and a group of miscellaneous activities. Training activities have become increasingly important in view of the large number of emergency workers assigned for service at recreation centers. The total registrations at 700 institutes in 1936 for both paid and volunteer workers, was 30,491.

Although no attempt was made to secure reports regarding the recreation work carried on solely through emergency funds, as a special study was being made by the Works Progress Administration and the National Youth Administration, a number of cities submitted reports on this work. According to these reports, 75 cities employed from emergency funds a total of 1,214 persons as recreation leaders, 704 of whom were employed throughout the year. The total amount spent for leadership from emergency funds in 51 of these cities was \$461,794. The total expenditures reported by 61 cities amounted to \$545,224, and supplementary local funds amounted to \$37,283. The facilities provided through the emergency funds included outdoor playgrounds, recreation buildings and indoor recreation centers, athletic fields, baseball diamonds, tennis courts, bathing beaches, and indoor and outdoor swimming pools and wading pools.

Self-Help Activities

SELF-HELP COOPERATIVES IN CALIFORNIA, 1935-36

DURING the fiscal year 1935-36 there were in California 93 self-help cooperatives which functioned at some time during the year. On June 30, 1936, the number of active societies had fallen to 76. While one new society had been organized during the year, eight societies had disbanded or merged with other groups. Information concerning the activities of these self-help cooperatives is contained in the annual report for 1935-36 of the Division of Self-Help Cooperative Service of the California State Relief Administration,¹ from which the following data are taken.

Membership of Self-Help Cooperatives

The total membership of the California self-help cooperatives in June 1936, was 2,426, a decrease of 2,612, or 51.8 percent, from the total membership of 5,038 in July 1935. With the exception of a slight increase between February and March 1936, there was a steady decrease in membership during the year.

Three counties—Los Angeles, Orange, and Alameda—had 91 percent of the total membership. Relief members formed 46.0 percent of the total membership in June 1936, as compared with 46.5 percent in July 1935. Of the total decrease of 2,612 in membership, the relief group had the larger relative decrease, 52.4 percent, as compared with 51.4 percent for the nonrelief group.

The number of individuals receiving benefits from these self-help cooperatives (based on the average number in a family reported by approximately 96 percent of the societies) is estimated to have been 15,618 in July 1935, 11,358 in December 1935, and 7,472 in June 1936.

The number of self-help cooperatives in California, their total membership, and the number and percent of relief and nonrelief members for each month in the fiscal year 1935-36, are shown in table 1.

¹ California State Relief Administration. Division of Self-Help Cooperative Service. Annual report, July 1, 1935-June 30, 1936. San Francisco, 1937.

For additional data on activities of the self-help groups in this State, see Monthly Labor Review, December 1935 (p 1504).

TABLE 1.—*Number and Membership of Self-Help Cooperatives in California, 1935-36, by Months*

Month	Number of cooper- atives	Members				
		Number			Percent of total	
		Nonrelief	Relief	Total	Nonrelief	Relief
1935						
July	77	2,693	2,345	5,038	53.5	46.5
August	77	2,629	2,228	4,857	54.1	45.9
September	73	2,447	2,079	4,526	54.1	45.9
October	73	2,230	1,993	4,223	52.8	47.2
November	72	2,169	1,808	3,977	54.5	45.5
December	72	2,167	1,485	3,652	59.3	40.7
1936						
January	67	1,861	1,391	3,252	57.2	42.8
February	67	1,806	1,285	3,091	58.4	41.6
March	70	1,767	1,359	3,126	56.5	43.5
April	64	1,491	1,197	2,688	55.5	44.5
May	64	1,324	1,157	2,481	53.4	46.6
June	69	1,309	1,117	2,426	54.0	46.0

A study of the membership turn-over during the 6 months, July to December 1935, revealed that approximately 16.5 percent of the total membership had left the cooperatives each month and about 11 percent had joined each month.

Production Activities

As the membership gradually declined, there was a resultant decrease in the activities of the organizations. The man-hours worked during the fiscal year 1935-36 totaled 2,474,107, which represented a decrease of over 1,400,000, or about 37 percent, from the total for 1934-35 (almost 4,000,000).

The goods and services produced during 1935-36 were estimated to have a total value of \$583,831. The average production per man-hour was almost 24 cents for the first 6 months of 1936, as compared with about 17 cents for the corresponding period in 1935 and 23 cents for the second half of 1935. Almost 77 percent (\$414,992) of the 1935-36 production was in 7 major projects. These projects and the average value of the goods and services produced per month, were as follows: Canning, \$9,169; kitchen, \$8,416; farming and garden, \$6,233; baking, \$3,246; dairying, \$3,034; sewing, \$2,281; and wood cutting, \$2,204.

The value of goods and services produced during 1935-36 included those produced by the self-help cooperatives in their own projects as well as those received in exchange for labor for private business enterprises. In the early period of the cooperatives the "labor exchange" activities were of primary importance, and even as late as February 1935, almost one-third (32 percent) of the production of that year was from labor-exchange activities. Since then the proportion has gradually declined, until in 1935-36 only 16 percent of the total production was from labor-exchange activities.

Table 2 shows the value of the total production each quarter during 1935-36 and the amount and proportion due to labor-exchange activities.

TABLE 2.—*Value of Production in Labor-Exchange Projects Compared with Total Value of Production, 1935-36*¹

Quarter	Total production	Labor exchange	
		Amount	Percent of total
1935			
July-September.....	\$165,506	\$27,926	17
October-December.....	121,566	17,765	15
1936			
January-March.....	71,658	11,536	16
April-June.....	88,938	13,646	15
Total.....	447,668	70,873	16

¹ Excluding service projects.

The value of labor-exchange production by projects and the proportion it formed of the total production of each project were as follows:

	Value	Percent of total project
Farming and garden.....	\$25,030	33
Dairying.....	11,303	31
Baking.....	6,242	16
Salvaging.....	7,133	--
Labor sales.....	21,165	--
Total.....	70,873	16

Real Incomes of Cooperative Workers

In order to ascertain what the members of the self-help cooperatives actually received for their work, in terms of dollars and cents, a study was made, for the 4-month period, September to December 1935, covering the majority of the grant cooperatives and approximately 90 per cent of the total membership. The average income, or retail value of what a working member of these cooperatives received in return for his work per month and per man-hour, was found to be as follows:

	Per month	Cents per man-hour
September.....	\$12.37	17.6
October.....	12.20	17.5
November.....	12.14	18.0
December.....	13.44	21.5

Cash wages were not included in the net income totals, as the figures for September and October were not available. In November and December cash wages totaled, respectively, \$1,914 and \$1,271, or 57 and 48 cents per working member. In a similar study made for

June 1936 and covering about 70 percent of the cooperatives and 80 percent of the membership, an average income of \$8.96 per member was shown.

Public Aid to Cooperatives

Allocations of Federal grants to self-help cooperatives in California as of June 30, 1936, amounted to \$639,072, of which \$45,000 was for consumption goods, \$584,333 for production, and \$9,739 for motor fuel. Of the total amount allocated, there was expended \$625,990 and there were unobligated balances of \$13,082.

State contingent grants from State relief funds are of two kinds—operating-capital and fixed-capital grants. Operating-capital grants are repayable in cash or goods produced by the cooperatives. Fixed-capital grants are for machinery and equipment, and are outright grants and nonrepayable. The total State grants in 1935–36 amounted to \$201,196, of which \$161,622, or about 80 percent, was in operating-capital grants, and \$39,574 in fixed-capital grants. Unobligated balances on June 30, 1936, in operating-capital grants amounted to \$46,841, the total expended being \$114,781. There was repaid by the cooperatives a total of \$48,739, or 42.5 percent of the total expended—\$36,634 in merchandise and \$12,105 in cash. The merchandise consisted of canned goods, fresh vegetables, soap, women's dresses, men's shirts, and pajamas. The cash repaid represented the proceeds of sales of cooperative-made goods to such Government agencies as the C. C. C. and the Transient Service.

In addition to the grants for operating capital and fixed capital, blanket grants were made for gasoline and oil, amounting to \$9,084, of which \$6,980 was to nongrant cooperatives. The total State grants thus amounted to \$210,280.

Machinery and equipment have been acquired by the cooperatives, through Federal and State grants, the total cost of which was \$292,869. The present value, after deductions for loss and depreciation, is \$221,006.

Labor Laws and Court Decisions

RAILROAD RETIREMENT ACT OF 1937

DURING the closing days of June 1937 the Congress adopted legislation providing a pension system for more than a million employees of the American railroads.

The first Railroad Employees' Retirement Act ¹ was approved on June 27, 1934, but was held unconstitutional by the United States Supreme Court on May 6, 1935,² in the case of the *Railroad Retirement Board v. Alton Railroad Co.* (295 U. S. 330). Later, on August 29, 1935, Congress passed a new act known as the Railroad Retirement Act of 1935,³ and by a separate act, provided for financing the pensions by the levying of taxes on both the carriers and their employees.⁴ The railroads contested the validity of both of these acts, and on June 26, 1936, the United States District Court for the District of Columbia held the latter act unconstitutional, but decided that the retirement act was valid.⁵

In order that it might be possible for a railroad pension plan to be created, which would be acceptable to both carriers and employees, President Roosevelt on January 7, 1937, suggested that the two groups meet and endeavor to reach an agreement. As a result of this suggestion, it was announced on March 16, 1937, that "after joint negotiations between representatives of the 21 standard railroad labor unions and railway managements a complete agreement has been reached in respect to a retirement plan for employees."

However, before the proposed plan could become effective, it was necessary for Congress to pass legislation amending the Railroad Retirement Act of 1935, as well as the taxing act. After hearings before the Congressional Committees on Interstate Commerce such legislation was passed. The new retirement act, officially designated the Railroad Retirement Act of 1937 (Public, No. 162), was approved on June 24, 1937, while the taxing act, called the Carriers' Taxing Act of 1937 (Public, No. 174), was approved on June 29, 1937.

The new retirement act covers all employees of express companies, sleeping-car companies, and railroads subject to the interstate commerce act. It also covers employee representatives, employees of

¹ See Monthly Labor Review, August 1934 (p. 363).

² See 49 U. S. Stat. 977.

³ Idem, June 1935, p. 1511.

⁴ See Monthly Labor Review, August 1936 (p. 328).

⁵ See 49 U. S. Stat. 973.

traffic associations, and organizations of railroad employees. In order to be entitled to the benefits of the act, an employee must have been in an employment relationship on or after August 29, 1935.

Every qualified employee may retire upon reaching the age of 65. An employee is not compelled to retire, but if he continues to work beyond the age of 65 no credit for service after that age will be given. Employees 60 years of age may retire after 30 years' service, and employees 60 years of age who are permanently disabled may retire regardless of the period of service, but in either event the annuity will be reduced one one-hundred-and-eightieth for each calendar month by which the worker's age falls below 65 when the annuity begins to accrue. An employee who has 30 years of service and is permanently disabled may retire irrespective of his age.

The amount of the annuity is determined by multiplying the years of service by percentages of the monthly compensation; i. e., by 2 percent on the first \$50, 1½ percent on the next \$100, and 1 percent on all sums over \$150 up to a maximum of \$300. The average monthly compensation used in calculating the annuity is that earned for services rendered after January 1, 1937, but the employee is entitled to include service rendered both before and after that date in order to make a total of 30 years of service. For years of service counted prior to January 1, 1937, the actual earnings are not taken, but the annuity is based on the compensation earned during the years from 1924 to 1931. The annuity is to be paid directly to the retired employee by the Federal Government. In no case may the annuity exceed \$120 a month. The minimum annuity for an employee who has completed 20 years of service is \$40 a month. It is also provided that the annuity shall not be less than the old-age benefit that the employee would receive under the Social Security Act if his service after December 31, 1936, were included in the term "employment" as defined in that act.

An employee may elect, by accepting a reduced annuity for himself, to provide an allowance, after his death, for his wife. Such a survival annuity may either be equal to the employee's annuity, or may be 75 or 50 percent of that amount. Death benefits are provided for persons who were employees subsequent to December 31, 1936. If the employee dies before receiving an annuity, his heirs or estate are to receive 4 percent of all wages earned by him, up to \$300 monthly, after December 31, 1936.

All persons on the pension rolls of railroads as of March 1, 1937, will come under the new retirement act on July 1, 1937, and thereafter will be paid the same pension as formerly paid by the railroad but not, however, in excess of \$120 per month.

A Railroad Retirement Board is created to administer the act. It is composed of three members appointed by the President, and confirmed by the Senate, at an annual salary of \$10,000 each. One

member is to be appointed upon recommendations of the representatives of the employees, and one by representatives of the carriers. The third member, who is the chairman of the Board, will be appointed without recommendations from either the carriers or the employees.

An annuity or pension may not be assigned or taxed and is not subject to garnishment, attachment, or other legal process. Carriers may furnish free transportation to persons receiving pensions.

The Carriers' Taxing Act of 1937 provides for an income tax on each railroad employee receiving \$300 or less. The tax will be 2¼ percent during 1937, 1938, and 1939; during the next 3 years, 3 percent; and during 1943, 1944, and 1945, 3¼ percent. In 1946, 1947, and 1948, it will be 3½ percent, and after December 31, 1948, 3¾ percent. A similar tax is levied on the carriers.

In the case of employee representatives, a larger tax is levied, ranging from 5½ percent in 1937, 1938, and 1939, to 7½ percent after December 31, 1948. Under the terms of the new act, the amount contributed by the employees, and the taxes paid by the railroads under the former act, will be returned to the respective taxpayers.



INTRODUCTION OF FRENCH LABOR LAWS INTO FRENCH INDO-CHINA

THE labor laws enacted in France in June 1936 dealing with the 40-hour week, vacations with pay, and collective agreements, specified that similar laws were to be made effective by decrees in Algeria and in the French colonies and protectorates. As there was practically no labor legislation in French Indo-China a decree¹ was issued in France December 30, 1936, and published in the Journal Officiel of Indo-China, February 3, 1937, establishing a labor code for native labor in the colony.

The code prohibits forced labor. Contract or indentured labor was already regulated by special legislation. Apprentices may be employed between the ages of 12 and 20, but their number may not exceed one-third of the workmen. Children under 12 years of age may not be employed in any industrial, commercial, or mining establishment. Employment contracts may be written or verbal. No fines are permitted. At the expiration of the contracts employees are entitled to receive a certificate from the employer showing the length of time employed and the kind of work in which they were engaged. Absence for 8 consecutive weeks on account of childbirth is not a cause for terminating a labor contract.

¹ Report from Quincy F. Roberts, American Consul, Saigon, French Indo-China, May 14, 1937.

Collective bargaining is provided for in the decree, but as there are no trade-unions or similar organizations, the inspector of labor represents the workers in the negotiations with employers. If no collective agreement in an industry can be reached, an arbitration committee consisting of a Court of Appeals Justice, the Inspector General of Labor, and a representative of the industry are to be appointed to decide upon the terms of the contract. Minimum wages are to be fixed annually by a special commission consisting of representatives of industries, members of elected native assemblies, and the local labor inspector. The scale of minimum wages fixed by the commission is subject to the approval of the chief of the local administration. Wages and salaries must be paid in cash and any cash advances may be deducted only to the extent of one-tenth of the employee's monthly wages.

Hours of work are limited to 9 per day for 1 year beginning January 1, 1937, and will be 8 per day thereafter. A 6-day week was established for employees, workers, and apprentices in industrial and commercial establishments, in mines, and in educational and charitable institutions. Insofar as possible the weekly day of rest should be the same for all employees, but it was provided that special regulations providing for rotation of work would be issued for continuous industries. Night work of girls and women and of males under the age of 18 is prohibited.

Workers with at least 6 months' service are entitled to receive 5 days' leave with pay for the year beginning January 1, 1937, and from January 1, 1938, such workers will be entitled to an annual vacation with pay of 10 days.

The law also provides for protection of the health and safety of workers. Machinery must be safeguarded and the Governor General is authorized to issue regulations covering special health or accident hazards in any particular industry. Provision is made for compensation for industrial accidents.

A French decree dated February 24, 1937, extended the provisions of the foregoing labor code for native workers with necessary modifications to French and other European workers but its application had not taken effect, with the exception of the workmen's compensation act which was made effective January 1, 1937.

Minimum Wage

MINIMUM-WAGE LEGISLATION IN THE UNITED STATES, AS OF JULY 1, 1937

THE recent decision of the United States Supreme Court upholding the validity of the minimum-wage law of the State of Washington (*West Coast Hotel Co. v. Parrish*, 300 U. S. 379)¹ caused many States again to consider legislation in this field. During 1937, four States (Arizona, Nevada, Oklahoma, and Pennsylvania) passed new minimum-wage laws, and two States (Massachusetts and New York) re-enacted their statutes, while Colorado, Connecticut, Minnesota, and Wisconsin passed amendatory legislation. In three jurisdictions (Arkansas, District of Columbia, and Puerto Rico) the laws which had been on the statute books for many years without being enforced, were revived and made effective.

As a result of the action taken in 1937, there are now minimum-wage laws in 24 jurisdictions.² Most of the laws apply to women and minors only and do not attempt to afford any protection to men. However, the new statute of Oklahoma, which was approved on April 22, 1937, applies to men as well as to women and children, while the Nevada law protects women only.

With the exception of Arkansas, Nevada, South Dakota, and Puerto Rico, where the minimum wages are fixed by the law, the laws generally provide for the establishment of wage boards to investigate and recommend to the commission or other organization authorized to administer the law, the minimum wage to be fixed for certain industries. Such agency may accept or reject the recommendation.

Prior to the decision of the United States Supreme Court in the case of *Adkins v. Children's Hospital* (261 U. S. 525) most of the laws fixed the minimum wage on the basis of the cost of living. The decision of the Supreme Court in this case, however, held that the law of the District of Columbia was unconstitutional. This statute, which was passed by Congress in 1918, provided that a wage conference should recommend to the minimum-wage board the min-

¹ See *Monthly Labor Review*, May 1937 (p. 1202).

For an account of earlier court action on minimum-wage legislation, see *Monthly Labor Review*, March 1936 (pp. 655-666).

² Arizona, Arkansas, California, Colorado, Connec-

ticut, District of Columbia, Illinois, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Puerto Rico, Rhode Island, South Dakota, Utah, Washington, and Wisconsin.

imum wages to be paid in certain occupations, and that these recommendations were to be either approved or rejected by the minimum-wage board. It specified that the wage must be "adequate to supply necessary cost of living and to maintain health and protect morals."

As a result of the Adkins decision, little legislation was enacted during the next 10 years and a few of the laws on the statute books were enforced. In 1933, however, seven States (Connecticut, Illinois, New Hampshire, New Jersey, New York, Ohio, and Utah) passed minimum-wage laws. With the hope that such laws would be held constitutional, and to overcome the objection raised in the Adkins decision, most of these laws were based upon a standard minimum-wage bill sponsored by the National Consumers' League. A similar law was passed by Massachusetts in 1934, and by Rhode Island in 1936. The standard bill did not attempt to regulate wages generally, but provided that whenever a substantial number of women and minors in any occupation were receiving less than a subsistence wage, an investigation should be made to determine whether the wages were "fairly and reasonably commensurate with the value of the service or class of service rendered." It defined an unreasonable wage as "less than the fair and reasonable value of the services rendered and less than sufficient to meet the minimum cost of living necessary for health."

In the Utah law, the State industrial commission is empowered to ascertain the wages paid, the hours, and conditions of labor in the various occupations. Upon investigation, if it is determined that the wages paid "are inadequate to supply the cost of proper living", the law provides that the commission shall call a "wage board" into conference. After a public hearing, the commission is empowered to fix a minimum wage, a maximum number of hours, and the standard conditions of labor "demanded by the health and welfare of the women and minors engaged in any occupation." A mandatory order may be subsequently issued setting forth the minimum wage and the maximum hours.

In 1936 minimum-wage legislation was given a considerable setback when the Supreme Court, by a five to four decision, held the New York law unconstitutional (*Morehead v. Tipaldo*, 298 U. S. 587).³ After this decision was rendered, Massachusetts amended its law by placing the minimum-wage administration under the department of health. However, following the later decision in the State of Washington case, the legislature restored the administration of the act to the department of labor and industries.

The decision of the Supreme Court previously referred to, upholding the validity of the Washington minimum-wage law, in effect validated all the minimum-wage laws, and the Attorney General of the

³ See Monthly Labor Review for July 1936 (p. 78).

United States recently ruled that, as a result of the decision, the District of Columbia law was revived.⁴ A similar ruling was made in Puerto Rico, and the inflexible minimum-wage law of the island, providing for a fixed minimum wage, is now in effect. Most of the laws enacted this year base the minimum-wage on the cost of living.

Principal Provisions of Laws

The principal provisions of the acts are summarized in the following table. For additional information on this subject, especially with reference to minimum-wage orders, see United States Women's Bureau Bulletin No. 144: State Labor Laws for Women.

⁴ For complete text of the minimum-wage law of Washington State, see *Monthly Labor Review*, May 1937 (pp. 1205-1208).

Principal Provisions of Minimum-Wage Laws in Effect in 1937

State	Citation	Classes covered	Exceptions	Occupations or industries covered	Body empowered to administer law	Method of selecting occupation or industry to be considered by this body	Method of arriving at wage awards	Means provided for securing enforcement of award	Principles by which amount of award is determined
Ariz.....	Acts of 1937, 2d spec. sess., S. B. 2.	Women; minors (either sex, under 21 years of age).	Women or minors (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury, may be granted special license authorizing wage lower than established minimum for fixed period.	Any occupation (defined as any class of work in any industry, trade, or business, or branch thereof, in which women or minors are gainfully employed, but not domestic service in employer's home or agricultural labor).	Industrial commission.	At discretion of commission or on petition of 20 or more residents of State.	Commission wage board, composed of not more than 3 representatives each of employers and of employees in the occupation (to be selected as far as practicable from nominations by respective groups) and of one industrial commissioner designated as chairman. Board investigates and recommends minimum wage, which commission may accept or reject.	Noncompliance with mandatory order makes employer liable to fine or imprisonment or both for each offense. Employee may recover back wages, costs, and attorney's fees.	Wage must be paid fairly and reasonably commensurate with value of service rendered and sufficient to meet the minimum cost of living necessary for health.
Ark.....	Crawford and Moses Digest 1921, secs. 7108, 7111 to 7114.	Women or minor female workers.	-----	Manufacturing, mechanical, or mercantile establishment, laundry, or express or transportation company. Does not apply to cotton factories.	Industrial welfare commission.	If wages fixed by law are too low or too high, commission after investigation and hearing may fix wage in occupation.	Minimum wage fixed by law. If minimum fixed by law is too low or too high, commission after investigation and hearing may fix wage in occupation.	Failure to comply with act is punishable by fine for each day of non compliance.	If wage is fixed by commission, wage must be adequate to supply necessities of proper living and to maintain health and welfare.
Calif.....	Deering's Gen. Laws act 3613.	Women; minors (female under 21, males under 18 years of age).	Women physically defective by age or otherwise may be granted special license, renewable every 6 months. Apprentices: Special wages set by commission during specified peri-	Occupations, trades, and industries in which women and minors are employed.	Industrial welfare commission of 5 members (3 a woman and 2 appointed by Governor, not for 4 years.	At discretion of commission. Investigation conducted by examining payers, books, and witnesses, and by holding public hearings.	Commissioner convenes wage board composed of representatives of employers and employees in trade in question, with member of commission as chairman; after investigation the board reports to commission the	Refusal to comply with law is a misdemeanor. Employee may recover back wages and costs.	Wage must be adequate to supply necessary cost of proper living, and to maintain health and welfare of workers.

minimum wage it deems necessary. After public hearing, commissioner

od of apprentice-ship.

Colo.	Stats. 1935, ch. 97, sec. 236-236; Acts of 1937, H. B. 788.	Women; minors (either sex, under 18 years of age).	Women physically defective or crippled by age or otherwise or less efficient than those of ordinary ability may be granted special license, stating wage; licensees must not exceed one-tenth of total employed in establishment.	Any occupation (construed to include "any and every vocation, trade, pursuit, and industry").	Industrial commission of 3 members (not more than 1 each representing employees and employers), appointed by Governor, with consent of senate for 6 years.	At discretion of commission or at request of not less than 25 persons engaged in the occupation. Investigation conducted by examining books, papers, and witnesses, and by holding public hearings.	minimum wage it deems necessary. After public hearing, commissioner fixes minimum wage. Commission may itself investigate and set minimum wage for an occupation, or may establish wage board composed of members of commission and not more than 3 representatives each of employers concerned, of female employees, and of public. Representatives of employers and the employees to be elected by their respective groups; at least 1 member of every group to be a woman. Wage board investigates and reports to commission a minimum wage, which commission may accept or reject.	Refusal to comply with law is a misdemeanor. Employee may recover back wages and costs.	Wage must be adequate to supply necessary cost of living and to maintain health, and must be sufficient living wages for women and minors of ordinary ability.
Conn.	Cumulative Supp. (1931, 1933, 1935) to Gen. Stat. 1930, ch. 131a (as amended 1937, ch. 319).	Women; minors (either sex, under 21 years of age).	Women or minors (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury, may obtain special license authorizing wage lower than established minimum for fixed period.	Any sweatshop occupation (defined as industry, trade, business, or occupation paying unfair and oppressive wages, but not including domestic service in employer's home or labor on farm).	Commissioner of labor and director of minimum wage division which may be set up in department of labor.	At discretion of commission or at request of 50 or more residents of State.	Commissioner, after conferring with director, appoints wage board composed of not more than 3 representatives each of employers and of employees concerned (to be selected as far as practicable from nominations by respective groups) and of public. After studying evidence and information in commissioner's possession, the board must, within 60 days of its organization, submit report, including recommended minimum fair-wage standards for women and minors in occupation. The commissioner may accept or reject.	Noncompliance with mandatory order makes employer liable to fine or imprisonment or both. Each week in any day of which an employee is paid less than rate set by order constitutes separate offense as to each employee so paid. Employee may recover back wages and costs.	Wage must be sufficient to meet minimum cost of living necessary for health.

Principal Provisions of Minimum-Wage Laws in Effect in 1937--Continued

State	Citation	Classes covered	Exceptions	Occupations or industries covered	Body empowered to administer law	Method of selecting occupation or industry to be considered by this body	Method of arriving at wage awards	Means provided for securing enforcement of award	Principles by which amount of award is determined
D. C.-----	40 U. S. Stat. L. 960.	Women; minors (either sex, under 18 years of age).	Women with earning capacity impaired by age or otherwise may be granted special license authorizing wage lower than established minimum for fixed period.	Any occupation (defined as industry, trade, or branch thereof but not including domestic service).	Minimum-wage board, appointed by D. C. Commissioners.	At discretion of board. Investigation conducted by examining partners, books, and witnesses, and by holding public hearings.	Board convenes conference composed of not more than 3 representatives each of employees and employers in the occupation and of public, and of 1 or more members of board. Conference investigates and recommends minimum wage which board may accept or reject.	Refusal to comply with law is a misdemeanor. Employee may recover back wages, costs, and attorney's fees.	Wage must be adequate to supply necessary cost of living and to maintain health and protect morals.
Ill.-----	Rev. Stat. 1935, ch. 48, secs. 238-256.	Women; minors (females under 18, males under 21 years of age).	Women (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury, may obtain special license authorizing wage lower than established minimum for fixed period.	Any industry, trade, or business, branch thereof, or class of work therein, in which women or minors are gainfully employed (not including domestic service in employer's home or labor on farm).	Department of labor, having director and assistant director or appointed by Governor with advice and consent of senate.	At discretion of department or at request of 50 or more residents of any county.	Director appoints wage board composed of not more than 2 representatives each of employers and of employees in the occupation (to be selected as far as practicable from nominations submitted by respective groups) and of 1 disinterested person representing public. The board investigates wage standards of women or minors in specified occupation, and recommends minimum wage, which may be accepted or rejected.	Violation of mandatory order is a misdemeanor and punishable by fine or imprisonment or both. Each week in any day of which order is not complied with constitutes separate offense as to each employee concerned.	Wage must be fairly commensurate with value of service rendered, and sufficient to meet minimum cost of living necessary for health.
Mass.-----	Acts of 1934, ch. 308 (as amended 1935, ch. 267; 1936, ch. 430; 1937, ch. 404).	Women; minors (either sex, under 21 years of age).	Women (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury, may be	Any occupation (defined as industry, trade, or business, or branch thereof, or class of work therein, in which women	Commissioner, department of labor and industries, or any of his authorized representatives and minimum	At discretion of commissioner or petition of 50 or more citizens of Commonwealth.	The commission (associate commissioners of the department of labor and industries) appoints wage board, composed of not more than 3 representatives each of employers and em-	Payment of wages less than those set by mandatory order is punishable by fine or imprisonment or both.	Wages must be fairly and reasonably commensurate with value of the service or class of serv-

Minn----	Mason's Stat. 1927, secs. 4210-4232 (as amended 1937, ch. 79).	Women: minors (either sex, under 21 years of age).	Women physically defective may obtain license fixing wage lower than established minimum. Licensees must not exceed 1/10 of total employed in establishment.	men or minors are gainfully employed, but not including domestic service in employer's home or labor on farm).	Any occupation (defined as any business, industry, trade, or branch of a trade).	Industrial commission of 3 members, appointed by Governor with advice and consent of senate, for 6 years.	At discretion of commission or at request of 100 persons engaged in the occupation. Investigation conducted by examining papers, books, and witnesses, and by holding public hearings.	Employees in the occupation (to be selected as far as practicable from nominations by respective groups) and of public. Board investigates and recommends minimum wage, which commission may accept or reject.	Each week in any day of which order is not complied with constitutes separate offense as to each employee so paid. Employee may recover back wages, costs, and attorney's fees.	Amount must be adequate to supply living wages for women and minors of ordinary ability.
Nev-----	Acts of 1937, ch. 207	Women-----	During probationary period of 3 months smaller wage, agreed upon by employer and employee, may be paid.	All occupations except governmental and domestic service.	Labor commissioner, designated by the Governor.	Minimum wage fixed by law.	Refusal to comply with law is a misdemeanor, punishable by fine or imprisonment or both.	Minimum wage fixed at \$3 a day or \$18 a week.		

Principal Provisions of Minimum-Wage Laws in Effect in 1937—Continued

State	Citation	Classes covered	Exceptions	Occupations or industries covered	Body empowered to administer law	Method of selecting occupation or industry to be considered by this body	Method of arriving at wage awards	Means provided for securing enforcement of award	Principles by which amount of award is determined
N. H.-----	Acts of 1933, ch. 87.	Women; minors (either sex, under 21 years of age).	Women or minors (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury, may be granted special license authorizing wage lower than established minimum for fixed period.	Any occupation (defined as industry, trade, or business, or branch thereof, but not including domestic service in employer's home or labor on farm).	Labor commissioner, appointed by Governor with advice and consent of council, for 3 years.	At discretion of commissioner of 50 or more residents of State. Investigation conducted by examination of books, and records and other relevant evidence.	Commissioner appoints wage board composed of not more than 3 representatives each of employers and employees in the occupation (to be selected as far as practicable from nominations by respective groups) and of public. Board investigates and recommends minimum wage which commissioner may accept or reject.	Noncompliance with mandatory order makes employer liable to fine or imprisonment or both. Each week in any day of which an employee is paid less than rate set by order constitutes separate offense as to each employee. Employer may recover back wages and costs.	Wage must be fairly and reasonably commensurate with value of service or class of service rendered.
N. J.-----	Acts of 1933, ch. 152.	Women; minors (either sex, under 21 years of age).	Women or minors (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury, may be granted special license authorizing wage lower than established minimum for fixed period.	Any occupation (defined as industry, trade, or business, or branch thereof, but not including domestic service in employer's home, or labor on farm, or employment in a hotel).	Commissioner of labor, with director of minimum-wage division and such deputy directors as commissioner deems advisable.	At discretion of commissioner of 50 or more residents of State.	Commissioner appoints wage board composed of not more than 3 representatives each of employers and employees in the occupation (to be selected as far as practicable from nominations by respective groups) and of public. Board investigates and recommends minimum wage, which commissioner may accept or reject.	Payment of wages less than those set by mandatory order is a misdemeanor or punishable by fine or imprisonment or both. Each week in any day of which order is not obeyed, is separate offense as to each employee.	Wage must be fairly and reasonably commensurate with value of service or class of service rendered.

N. Y.	Supp. (1931-35) to Cahill's Consol. L., 1930, ch. 32, art. 19 (as amended 1937, ch. 276).	Women or minors (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury, may be granted special license authorizing wage lower than established minimum for fixed period.	Any occupation (defined as industry, trade, or business, or branch thereof, or class of work therein, in which women or minors are gainfully employed, but not including domestic service in employer's home or labor on farm).	Division of minimum wage under Department of Labor.	At discretion of commissioner or on petition of 50 or more residents of State, engaged in or affected by occupation sought to be investigated.	Commissioner appoints wage board composed of not more than 3 representatives each of employers and of employees in the occupation (to be selected as far as practicable from nominations by respective groups) and of public. Board investigates and recommends minimum wage, which commissioner may accept or reject.	Payment of wages less than those set by mandatory order is a misdemeanor, or, punishable by fine or imprisonment or both. Each week in any day of which order is not complied with constitutes separate offense as to each employee so paid.	Wage must be fairly and reasonably commensurate with value of service rendered, sufficient to provide adequate maintenance and to protect health.
N. Dak. ..	Supp. (1913-25) to Comp. Laws 1913, secs. 396b1-396b16 (as amended 1935, ch. 162).	Females physically defective by age or otherwise (or apprentices or learners in occupation usually requiring such) may be granted special license authorizing wage lower than established minimum.	Any occupation (defined as business, industry, trade, or branch thereof, but not including agricultural or domestic service).	Commissioner of agriculture and labor.	At discretion of commissioner. Investigation conducted by examining papers, books, and witnesses, and by holding public hearings.	Commissioner organizes conference composed of not more than 3 representatives each of employers and of employees in the occupation in question and of public, and 1 or more commissioners. Conference investigates and recommends minimum wage, which bureau may accept or reject.	Refusal to comply with order of commissioner is unlawful, punishable by fine or imprisonment or both. Employee may recover back wages and costs.	Wage must be adequate to supply necessary cost of living and maintain woman workers in health. Reasonable wages for minor workers.
Ohio	Acts of 1933, p. 502.	Women or minors (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury, may be granted special license authorizing wage lower than established minimum for fixed period.	Any occupation (defined as industry, trade, or business, or branch thereof, or class of work therein, in which women or minors are gainfully employed, but not including domestic service in employer's home or labor on farm).	Director of industrial relations, with superintendent of minimum-wage division and such assistant superintendents as may be necessary.	At discretion of commissioner or on petition of 50 or more residents of State.	Commissioner appoints wage board composed of not more than 3 representatives each of employers and of employees in the occupation (to be selected as far as practicable from nominations by respective groups) and of public. Board investigates and recommends minimum wage, which commissioner may accept or reject.	Payment of wages less than those set by mandatory order is a misdemeanor, or, punishable by fine or imprisonment or both. Each week in any day of which order is not complied with constitutes separate offense as to each employee so paid.	Wage must be fairly and reasonably commensurate with value of service or class of service rendered.

Principal Provisions of Minimum-Wage Laws in Effect in 1937—Continued

State	Citation	Classes covered	Exceptions	Occupations or industries covered	Body empowered to administer law	Method of selecting occupation or industry to be considered by this body	Method of arriving at wage awards	Means provided for securing enforcement of award	Principles by which amount of award is determined
Okla.-----	Acts of 1937, S. B. 399.	Men, women, or minors (either sex, under 18 years of age).	Any person (including learners or apprentices) physically defective or crippled by age or otherwise, may be granted special license authorizing wage lower than established minimum for fixed period.	Any occupation except agriculture, horticulture, or dairy raising.	Industrial welfare commission, composed of Governor, commissioner of labor, and chairman of State industrial commission.	Commission is empowered to investigate various occupations.	Commission organizes conference composed of equal number of representatives of employers and employees in the occupation, 1 or more representatives of public (but no more representatives of public than in either one of the other groups), and a member of commission. Conference recommends minimum wage, which commission may accept or reject. In case of minors, commission may at its discretion set minimum wage.	Refusal to comply with law is a misdemeanor. Employee may recover back wages, costs, and attorney's fees.	Wage must be adequate to supply necessary cost of proper living, and to maintain health and welfare of workers.
Oreg.-----	Code 1930, secs. 49-301 to 49-324 (as amended 1931, ch. 394; 1933 (2d spec. s. s.), ch. 88).	Women; minors (either sex, under 18 years of age).	Women physically defective or crippled by age or otherwise may obtain special license authorizing wage lower than established minimum.	Any occupation (defined as any and every vocation, pursuit, trade, and industry).	State welfare commission of 3 members appointed by Governor for 4 years.	At discretion of commission. Investigation conducted by examining papers, books, and witnesses, and by holding public hearings.	Commission organizes conference composed of not more than 3 representatives each of employers and of employees in the occupation and of public, and 1 or more commissioners. Conference investigates and recommends minimum wage, which commission may accept or reject.	Refusal to comply with law is a misdemeanor or punishable by fine or imprisonment or both. Employee may recover back wages and costs.	Wage must be adequate to supply necessary cost of living and to maintain them in health.
Pa.-----	Acts of 1937, No. 248.	Women; minors (either sex, under 21 years of age).	Women or minors (including learners or apprentices) with earning capacity impaired by age, physical or mental deficiency, or injury may obtain special license authorizing wage	Any industry, trade, business or class of work in which minors or women are gainfully employed (not including domestic service	Department of labor.	At discretion of department or at request of 50 or more residents of the Commonwealth.	Secretary, after conferring with director, appoints wage board composed of not more than 3 representatives each of employers and of employees concerned (to be selected as far as practicable from nominations by respective groups)	Noncompliance with mandatory order makes employer liable to fine or imprisonment or both. Each week in any day of which	Wage must be fairly commensurate with value of service rendered, and sufficient to meet minimum cost of living

minimum
cost of living

week in any
day of which

cable from nominations
by respective groups)

authorizing wage
in domestic service

Puerto Rico.	Acts of 1919, No. 45; acts of 1931, No. 15.	Women and girls.	lower than established minimum for fixed period.	in home of employer or service in a religious community or labor on farm or boys lawfully employed in sale or delivery of newspapers and magazines).	Commissioner of labor.	-----	and of public. After studying evidence and information in secretary's possession, board must, within 60 days of its organization, submit report, including recommended minimum fair-wage standards for women and minors in occupation. The department may accept or reject this report. Minimum wage fixed by law.	an employee is paid less than rate set by order constitutes separate offense as to each employee so paid. Employer may recover back wages and costs.	necessary for health.
R. I.	Acts of 1936, ch. 2289.	Women; minors (either sex, under 21 years of age).	First 3 weeks of apprenticeship. Women or minors (including learners or apprentices) with impaired capacity by age, physical or mental deficiency, or injury, may be granted special license authorizing wage lower than established minimum for fixed period.	Any occupation except agriculture or agricultural industries. Any occupation (defined as industry, trade, or business or branch thereof or class of work therein in which women or minors are gainfully employed).	Division of women and children in department of labor.	At discretion of commissioner, or on petition of 50 or more residents of the State.	Commissioner appoints wage board composed of not more than 3 representatives each of employers and of employees in the occupation (to be selected as far as practicable from nominations by respective groups) and of public. Board investigates and recommends minimum wage, which commissioner may accept or reject. Minimum wage fixed by law.	Refusal to comply with law is a misdemeanor, punishable by a fine.	Wages must be fairly and reasonably commensurate with value of service or of class of service rendered and not greater than industry can afford to pay.
S. Dak.	Comp. Laws 1929, secs. 10022A-10022E (as amended 1931, ch. 173).	Women, and girls over 14 years of age.	Women mentally or physically deficient or disabled may obtain permit authorizing wage lower than established minimum. Apprentices: Industrial commissioner must be notified of each apprentice and give permission for his employment.	Any factory, workshop, mechanical or mercantile establishment, laundry, hotel, restaurant, or packing house.	Industrial commissioner appointed by Governor for 2 years.	-----	Refusal to comply with law a misdemeanor and punishable by fine or imprisonment or both. Employee may recover back wages and costs.	Wage must be a unit which equals a living wage.	

Principal Provisions of Minimum-Wage Laws in Effect in 1937—Continued

State	Citation	Classes covered	Exceptions	Occupations or industries covered	Body empowered to administer law	Method of selecting occupation or industry to be considered by this body	Method of arriving at wage awards	Means provided for securing enforcement of award	Principles by which amount of award is determined
Utah.....	Acts of 1933, ch. 38.	Women; minors (either sex, under 21 years of age, but commission not authorized to fix minimum wages and maximum hours for males between 18 and 21).	Women physically defective by age or otherwise may be granted special license. License must be renewed every 6 months. Apprentices: Special wages set by commission during specified period of apprenticeship.	Occupations, trades, and industries in which women and minors are employed.	Industrial commission of 3 members, appointed by Governor for 4 years.	At discretion of commission. Investigation conducted by examining papers, books, and witnesses, and by holding public hearings.	Commission calls wage board composed of equal number of representatives of employers and employees in the trade, with a representative of commission as chairman. Board investigates and reports to commission, which fixes minimum wage after public hearing.	Payment of less than fixed minimum wage or refusal to comply with provisions of law is a misdemeanor or. Employee may recover back wages and costs.	Wage must be adequate to supply women and minors the cost of proper living, and to maintain the health and welfare of such workers.
Wash.....	Remington's Rev. Stats. 1931, secs. 7623-7641.	Women; minors (either sex, under 18 years of age).	Women physically defective or crippled by age or otherwise (or apprentices in occupations usually requiring such) may secure license authorizing wage lower than legal minimum.	Occupations, trades, and industries.	Industrial welfare committee composed of director of labor and industries, appointed by Governor with consent of senate and holding office at his pleasure; supervisor of industrial insurance and supervisor of industrial relations, appointed by director of labor and industries; and supervisor of	At discretion of commission. Investigation conducted by examining papers, books, and witnesses, and by holding public hearings.	Committee organizes conference composed of equal number of representatives of employers and employees in occupation in question, 1 or more representatives of public (but no more than in either one of the other groups), and a member of commission. Conference recommends minimum wage, which commission may accept or reject.	Payment of less than standard minimum or refusal to comply with law is a misdemeanor or. Employee may recover back wages and costs.	Amount must be a reasonable wage, not detrimental to health and morals and sufficient for decent maintenance of women.

Stat. 1935, secs. 104.01- 104.125 (as amended 1937, ch. 333).	W o m e n ; minors.	Adult women un- able to earn min- imum may ob- tain license fixing lower wage. Em- ployer may ob- tain license to pay adult fe- male wage lower than established rate, if he estab- lishes satisfactor- ily that he is un- able to pay such wage. Minors unable to earn "a living wage" may obtain license fix- ing lower wage commensurate with their ability.	Every person in receipt of or entitled to, any compen- sation for la- bor performed for any em- ployer.	Industrial com- mission, whose members are appointed by Governor, with advice and consent of senate, for 6 years.	women in in- dustry, ap- pointed by supervisor of industrial re- lations with approval of la- bor and in- dustries.	At discretion of commission or on verified complaint filed by any person.	Commission organizes ad- visory wage board, se- lected to represent fairly employers, employees, and public. Living wage determined by commission and advi- sory board shall be the legal minimum wage.	P a y m e n t o f wages in vio- lation of any order of com- mission is deemed viola- tion of law, unless it can be proved that the order was unreasonable. Every day an order is not complied with is a separate offense.	Amount must be a "living wage", i. e., sufficient to maintain em- ployee under conditions consistent with his wel- fare. Wage must not be oppressive (defined as "lower than a reasonable and adequate compensation for services rendered").
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Wis-----

Industrial Disputes

TREND OF STRIKES

ACCORDING to preliminary estimates there was an increase of 16 percent in the number of strikes beginning in June as compared with May, a decrease of nearly 25 percent in the number of workers involved and an increase of about 60 percent in man-days of idleness due to strikes. The estimate of 4,500,000 man-days of idleness in June indicates the greatest amount of idleness because of strikes in any month from the beginning of the year 1927. (Data on man-days of idleness are not available for the years prior to 1927.) The large figure is accounted for to a considerable extent by the strike in the steel industry which began in May and continued throughout the month of June.

Trend of Strikes, January 1936 to June 1937¹

Year and month	Number of strikes					Workers involved in strikes		Man-days idle during month or year
	Continued from preceding month	Beginning in month or year	In progress during month	Ended in month	In effect at end of month	Beginning in month or year	In progress during month	
1936								
Total for year		2, 172				788, 648		13, 901, 956
January	84	167	251	149	102	32, 406	59, 153	635, 519
February	102	148	250	131	119	63, 056	89, 735	748, 491
March	119	185	304	174	130	75, 191	122, 162	1, 331, 162
April	130	183	313	179	134	65, 379	95, 526	699, 900
May	134	206	340	219	121	72, 824	123, 030	1, 019, 171
June	121	188	309	158	151	63, 429	133, 531	1, 327, 678
July	151	173	324	197	127	38, 017	125, 281	1, 105, 480
August	127	228	355	210	145	68, 752	118, 268	911, 216
September	145	234	379	236	143	65, 994	130, 875	1, 063, 100
October	143	192	335	219	116	100, 845	148, 570	1, 053, 878
November	116	136	252	126	126	70, 116	157, 007	1, 940, 628
December	126	132	258	158	100	72, 639	184, 859	2, 065, 733
1937								
January	100	162	262	129	133	106, 514	212, 161	2, 698, 115
February	133	200	333	199	134	107, 117	232, 583	1, 479, 222
March	134	590	724	491	233	284, 253	345, 274	3, 174, 784
April	233	490	723	462	261	214, 760	376, 821	3, 332, 475
May ¹	261	495	756	456	300	275, 000	385, 000	2, 750, 000
June ¹	300	575	875	530	345	210, 000	375, 000	4, 500, 000

¹ Strikes involving fewer than 6 workers or lasting less than 1 day are not included in this table, nor in the following tables. Notices or leads regarding strikes are obtained by the Bureau from more than 650 daily papers, labor papers, and trade journals, as well as from all Government labor boards. Letters are written to representatives of parties in the dis-

putes asking for detailed and authentic information. Since answers to some of these letters have not yet been received, the figures given for the late months are not final. This is particularly true with regard to figures for the last 2 months, and these should be considered as preliminary estimates.

As compared with June a year ago, the estimates for June 1937 indicate increases of 205 percent in the number of strikes, about 230 percent in the number of workers involved, and nearly 240 percent in man-days of idleness.

These estimates are based on newspaper accounts of strikes and various reports which are available at the time this issue goes to press. They are necessarily subject to change as more accurate information is received. An analysis of strikes in June, based on detailed and verified information, will appear in the October issue of the Monthly Labor Review.



ANALYSIS OF STRIKES IN APRIL 1937¹

THE Bureau has obtained detailed information on 490 strikes which began in April 1937. The following analysis is based on this number, and in addition, 233 strikes which continued into April from preceding months. This makes a total of 723 strikes in progress during the month, which involved nearly 377,000 workers. There were 3,332,000 man-days of idleness in April as a result.

Approximately 45 percent of the total number of strikes beginning in April were in 5 industry groups. There were 88 in the textile industries—more than double the number in any other industry group—35 in the lumber industries, the same number in trade, 34 in building and construction, and 33 in the machinery manufacturing industries. The greatest number of workers involved in strikes during the month were in the automobile industry, where a few large strikes which began in March carried over into April and were settled during the month.

TABLE 1.—*Strikes in April 1937, by Industry*

Industry	Beginning in April		In progress during April		Man-days idle during April
	Number	Workers involved	Number	Workers involved	
All industries	490	214,760	723	376,821	3,332,475
Iron and steel and their products, not including machinery	28	4,970	43	9,838	76,595
Blast furnaces, steel works, and rolling mills.....	6	1,520	9	2,088	24,679
Bolts, nuts, washers, and rivets.....	1	754	1	754	754
Cutlery (not including silver and plated cutlery) and edge tools.....			3	1,081	2,323
Forgings, iron and steel.....	1	62	1	62	124
Hardware.....			3	1,586	18,952
Plumbers' supplies and fixtures.....	2	70	3	520	3,830
Steam and hot-water heating apparatus and steam fittings.....	1	205	1	205	2,460
Stoves.....	1	287	3	968	1,973
Structural and ornamental metalwork.....	3	201	3	201	1,644

¹ Detailed information on a few strikes has not yet been received. (See footnote to preceding table.) Data on missing strikes will be included in the annual report.

TABLE 1.—*Strikes in April 1937, by Industry—Continued*

Industry	Beginning in April		In progress during April		Man-days idle during April
	Number	Workers involved	Number	Workers involved	
Iron and steel and their products, not including machinery—Continued.					
Tin cans and other tinware	3	973	3	973	8,912
Tools (not including edge tools, machine tools, files, and saws) (hand tools)	3	83	3	83	792
Wirework	4	348	4	348	1,242
Other	3	467	6	969	8,910
Machinery, not including transportation equipment	33	28,862	44	33,965	190,176
Agricultural implements	1	218	1	218	2,834
Electrical machinery, apparatus, and supplies	8	3,521	12	6,963	94,568
Engines, turbines, tractors, and water wheels	1	10,910	1	10,910	32,730
Foundry and machine-shop products	8	1,690	11	2,085	13,487
Radios and phonographs	1	8,026	4	9,108	23,364
Textile machinery and parts	2	254	2	254	2,920
Other	12	4,243	13	4,427	20,273
Transportation equipment	19	29,974	27	112,909	443,490
Aircraft	1	230	1	230	460
Automobiles, bodies and parts	15	28,030	21	111,155	412,040
Cars, electric and steam-railroad	1	282	2	1,032	22,320
Shipbuilding			1	60	660
Other	2	432	2	432	8,010
Railroad repair shops	1	600	2	624	15,212
Electric railroad			1	24	312
Steam railroad	1	600	1	600	15,000
Nonferrous metals and their products	19	2,532	29	4,573	39,551
Aluminum manufactures	1	118	1	118	118
Brass, bronze, and copper products	1	115	1	115	2,070
Clocks and watches and time-recording devices	2	344	2	344	5,894
Jewelry	5	452	7	505	8,268
Lighting equipment	1	264	6	1,179	9,337
Smelting and refining—copper, lead, and zinc	1	60	1	60	240
Stamped and enameled ware	5	826	7	1,697	10,364
Other	3	353	4	555	3,260
Lumber and allied products	35	10,213	50	12,078	126,449
Furniture	18	2,181	25	2,899	35,308
Millwork and planing	4	1,586	6	1,805	23,905
Sawmills and logging camps	6	6,061	7	6,261	56,375
Other	7	385	12	1,113	10,861
Stone, clay, and glass products	16	8,410	21	8,843	46,763
Brick, tile, and terra cotta	3	379	4	398	2,396
Cement	2	841	2	841	3,506
Glass	2	100	3	185	2,270
Marble, granite, slate, and other products			1	144	576
Pottery	3	6,239	3	6,239	28,578
Other	6	851	8	1,036	9,457
Textiles and their products	88	18,281	140	40,581	357,777
Fabrics:					
Carpets and rugs	2	1,063	2	1,063	1,109
Cotton goods	8	3,122	9	3,653	46,612
Cotton small wares	2	210	3	1,018	9,154
Dyeing and finishing textiles	3	336	6	464	7,100
Silk and rayon goods	7	777	14	2,481	27,140
Woolen and worsted goods	7	1,025	10	2,912	50,796
Other	5	1,539	5	1,539	7,850
Wearing apparel:					
Clothing, men's	6	1,553	8	1,826	20,142
Clothing, women's	19	2,904	30	3,970	38,566
Corsets and allied garments			1	35	770
Men's furnishings	2	152	3	467	1,435
Hats, caps, and millinery	3	490	4	573	4,046
Shirts and collars	2	359	4	794	2,736
Hosiery	12	3,016	24	17,076	106,899
Knit goods	4	1,213	9	1,708	19,334
Other	6	522	8	1,002	14,088
Leather and its manufactures	13	4,082	27	11,236	169,007
Boots and shoes	6	1,580	15	7,802	137,270
Leather	2	354	2	354	2,586
Other leather goods	5	2,148	10	3,080	29,151
Food and kindred products	17	7,872	31	9,107	62,587
Baking	4	496	10	690	4,864
Beverages	3	1,314	3	1,314	7,284
Canning and preserving	1	1,225	4	1,749	19,636
Confectionery	8	4,688	9	4,856	25,855
Flour and grain mills			1	43	172
Other	1	149	4	455	4,776
Tobacco manufactures	9	1,926	10	3,926	40,265
Cigars	8	1,659	9	3,650	39,464
Other	1	267	1	267	801

TABLE 1.—*Strikes in April 1937, by Industry—Continued*

Industry	Beginning in April		In progress during April		Man-days idle during April
	Number	Workers involved	Number	Workers involved	
Paper and printing	10	3,049	19	5,409	70,929
Boxes, paper.....	2	227	3	256	1,753
Paper and pulp.....	2	135	2	135	435
Printing and publishing:					
Book and job.....	3	1,017	6	2,078	35,478
Newspapers and periodicals.....	2	1,500	3	1,578	12,096
Other.....	1	170	5	1,361	21,167
Chemicals and allied products	3	1,394	6	2,664	35,304
Chemicals.....	1	7	1	7	151
Druggists' preparations.....	1	1,379	1	1,379	6,895
Paint and varnishes.....	1	8	2	30	604
Petroleum refining.....			1	48	1,248
Rayon and allied products.....			1	1,200	26,400
Rubber products	4	3,329	6	13,882	279,167
Rubber tires and inner tubes.....			1	10,500	231,000
Other rubber goods.....	4	3,329	5	3,382	48,167
Miscellaneous manufacturing	18	2,470	26	3,704	40,425
Electric light, power, and manufactured gas.....	1	125	1	125	500
Broom and brush.....	1	335	1	335	2,890
Other.....	16	2,010	24	3,244	37,035
Extraction of minerals	22	55,725	25	56,221	985,371
Coal mining, anthracite.....			1	435	11,310
Coal mining, bituminous.....	21	55,575	22	55,586	970,911
Quarrying and nonmetallic mining.....	1	150	2	200	3,150
Transportation and communication	26	3,784	33	5,634	45,128
Water transportation.....	8	1,732	9	2,075	11,068
Motortruck transportation.....	8	878	11	1,546	9,503
Motorbus transportation.....	2	73	2	73	153
Taxicabs and miscellaneous.....	3	169	5	808	11,956
Electric railroad.....	1	453	2	653	11,089
Telephone and telegraph.....	1	66	1	66	264
Other.....	3	413	3	413	1,095
Trade	35	4,948	51	7,285	55,397
Wholesale.....	10	1,181	13	1,458	12,706
Retail.....	25	3,767	38	5,827	42,691
Domestic and personal service	26	9,065	37	11,674	124,733
Hotels, restaurants, and boarding houses.....	9	1,772	14	2,032	14,732
Personal service, barbers, beauty parlors.....	1	34	1	34	102
Laundries.....	10	3,477	14	5,671	74,283
Dyeing, cleaning, and pressing.....	4	3,754	6	3,909	35,560
Elevator and maintenance workers (when not attached to specific industry).....	2	28	2	28	56
Professional service	2	146	4	245	1,637
Recreation and amusement.....			1	42	1,092
Professional.....			1	57	399
Semiprofessional, attendants, and helpers.....	2	146	2	146	146
Building and construction	34	3,930	50	7,065	43,533
Buildings, exclusive of P. W. A.....	25	2,327	34	4,742	20,338
All other construction (bridges, docks, etc., and P.W.A. buildings).....	9	1,603	16	2,323	23,195
Agriculture, etc.	3	210	6	412	982
Agriculture.....	1	35	4	237	557
Fishing.....	2	175	2	175	425
W. P. A., relief, and resettlement projects	11	8,269	15	12,850	65,903
Other nonmanufacturing industries	18	1,719	21	2,097	15,997

Two-thirds of the strikes beginning in April were in eight States. There were 73 in New York, 63 in Massachusetts, 60 in Pennsylvania, 33 in Illinois, 27 each in New Jersey and in Wisconsin, 26 in Michigan, and 23 in Ohio.

The greatest number of workers involved and the most man-days of idleness because of strikes were in Michigan and were accounted for largely by strikes in the automobile industry which began in March and were settled in April.

Fourteen of the seven hundred and twenty-three strikes in progress during April, as shown at the end of table 2, extended into two or

more States. The largest of these were a short strike of pottery workers in Ohio and West Virginia and a strike of bituminous-coal miners in Kentucky and Tennessee which continued into May.

TABLE 2.—*Strikes in April 1937, by States*

State	Beginning in April		In progress during April		Man-days idle during April
	Number	Workers involved	Number	Workers involved	
All States.....	490	214,760	723	376,821	3,332,475
Alabama.....	6	16,280	7	16,291	334,600
Arizona.....	1	97	1	97	485
California.....	16	14,584	28	15,904	116,123
Colorado.....	1	11	1	11	55
Connecticut.....	8	2,202	14	3,480	39,374
Delaware.....	1	250	3	850	4,750
District of Columbia.....	2	270	2	270	520
Florida.....	1	70	1	70	315
Georgia.....			2	606	14,331
Idaho.....	1	9	1	9	45
Illinois.....	33	19,701	51	22,588	145,837
Indiana.....	12	1,447	16	2,245	23,290
Iowa.....	5	10,171	5	10,171	211,109
Kansas.....	5	779	5	779	4,961
Kentucky.....	5	5,659	6	5,827	91,061
Maine.....	2	124	3	4,124	105,636
Massachusetts.....	63	10,711	74	14,497	96,896
Michigan.....	26	27,946	46	116,649	504,229
Minnesota.....	2	352	9	1,828	18,282
Mississippi.....	1	211	2	526	4,743
Missouri.....	11	3,303	23	8,301	112,378
Montana.....			1	36	108
New Hampshire.....	4	924	5	1,047	9,836
New Jersey.....	27	5,869	36	6,812	71,361
New York.....	73	9,978	100	15,091	135,420
North Carolina.....	3	580	3	580	580
Ohio.....	23	5,414	47	22,359	338,169
Oklahoma.....	2	31	2	31	130
Oregon.....	7	4,112	8	4,312	36,820
Pennsylvania.....	60	25,488	93	43,765	270,404
Rhode Island.....	17	3,830	31	8,584	100,093
South Dakota.....	2	85	2	85	170
Tennessee.....	9	992	11	1,083	5,798
Texas.....	6	1,491	9	1,588	18,895
Vermont.....	1	10	2	76	278
Virginia.....	9	11,256	12	12,540	127,173
Washington.....	5	3,189	10	5,302	52,432
West Virginia.....	3	128	3	128	1,130
Wisconsin.....	27	7,726	33	8,138	34,776
Wyoming.....	1	139	1	139	417
Interstate.....	9	19,341	14	20,002	299,375

The average number of workers involved in the strikes beginning in April was 438. Approximately one-tenth of the strikes involved less than 20 workers each and 47 percent involved less than 100 workers each. In 8 strikes the number of workers involved was between 5,000 and 10,000 and only in 3 were as many as 10,000 workers involved. In table 3 the strikes in each industry group are classified according to the number of workers involved.

TABLE 3.—*Strikes Beginning in April 1937, Classified by Number of Workers Involved*

Industry group	Total	Number of strikes in which the number of workers involved was—						
		6 and under 20	20 and under 100	100 and under 500	500 and under 1,000	1,000 and under 5,000	5,000 and under 10,000	10,000 and over
All industries.....	490	56	175	185	37	26	8	3
<i>Manufacturing</i>								
Iron and steel and their products, not including machinery.....	28	3	12	11	2			
Machinery, not including transportation equipment.....	33	1	9	13	5	3	1	1
Transportation equipment.....	19	1	2	9	3	2	1	1
Railroad repair shops.....	1				1			
Nonferrous metals and their products.....	19	2	7	10				
Lumber and allied products.....	35	5	11	16		3		
Stone, clay, and glass products.....	16		8	5	2		1	
Textiles and their products.....	88	2	38	39	7	2		
Leather and its manufactures.....	13		4	7	1	1		
Food and kindred products.....	17	3	3	6	2	3		
Tobacco manufactures.....	9	1	2	5	1			
Paper and printing.....	10		5	3	1	1		
Chemicals and allied products.....	3	2				1		
Rubber products.....	4		1		1	2		
Miscellaneous manufacturing.....	18	4	6	8				
<i>Nonmanufacturing</i>								
Extraction of minerals.....	22		1	9	3	4	4	1
Transportation and communication.....	26	3	13	9		1		
Trade.....	35	8	12	13	1	1		
Domestic and personal service.....	26	9	9	4	2	2		
Professional service.....	2		1	1				
Building and construction.....	34	7	17	7	3			
Agriculture, etc.....	3		2	1				
W. P. A., relief, and resettlement projects.....	11	1	3	5	1		1	
Other nonmanufacturing industries.....	18	4	9	4	1			

Union organization matters were the major issues in more than half (55 percent) of the strikes beginning in April. About 54 percent of the workers involved were in these strikes. In 36½ percent of the strikes, including 42 percent of the workers, the major issues were wages and hours. Eight percent of the strikes, including 5 percent of the workers, were over jurisdictional questions, union rivalry, or miscellaneous matters other than wage-and-hour or union-organization issues. (See table 4.)

TABLE 4.—*Major Issues Involved in Strikes Beginning in April 1937*

Major issues	Strikes		Workers involved	
	Number	Percent of total	Number	Percent of total
All issues.....	490	100.0	214,760	100.0
Wages and hours.....	179	36.5	89,830	41.8
Wage increase.....	119	24.3	75,087	34.9
Wage decrease.....	4	.8	578	.3
Wage increase, hour decrease.....	54	11.0	13,954	6.5
Hour decrease.....	2	.4	211	.1
Union organization.....	270	55.1	114,965	53.6
Recognition.....	30	6.1	25,998	12.1
Recognition and wages.....	74	15.1	27,340	12.8
Recognition and hours.....	1	.2	28	(1)
Recognition, wages, and hours.....	128	26.2	35,668	16.7
Closed shop.....	21	4.3	6,273	2.9
Discrimination.....	10	2.0	4,745	2.2
Other.....	6	1.2	14,913	6.9
Miscellaneous.....	41	8.4	9,965	4.6
Rival unions or factions.....	5	1.0	1,896	.9
Jurisdiction.....	5	1.0	464	.2
Other.....	30	6.2	7,480	3.4
Not reported.....	1	.2	125	.1

¹ Less than ½ of 1 percent.

Of the 723 strikes in progress in April, 462 were terminated during the month. In table 5 the strikes in each industry group are classified according to their duration. Thirty-nine percent of the strikes lasted less than a week, and 65 percent ended in less than one-half month after they began. The average duration of the 462 strikes was 13½ calendar days. Only five of them had been in progress for 3 months or more.

TABLE 5.—Duration of Strikes Ending in April 1937

Industry group	Total	Number of strikes with duration of—					
		Less than 1 week	1 week and less than ½ month	½ and less than 1 month	1 and less than 2 months	2 and less than 3 months	3 months or more
All industries.....	462	178	122	97	48	12	5
<i>Manufacturing</i>							
Iron and steel and their products, not including machinery.....	20	10	7	9	3		
Machinery, not including transportation equipment.....	25	10	6	3	5	1	
Transportation equipment.....	19	7	3	7	2		
Railroad repair shops.....	1			1			
Nonferrous metals and their products.....	16	9	1	4	2		
Lumber and allied products.....	25	4	11	10			
Stone, clay, and glass products.....	10	3	4	1	1		1
Textiles and their products.....	89	25	30	14	16	2	2
Leather and its manufactures.....	19	5	3	9	2		
Food and kindred products.....	17	3	5	4	2	3	
Tobacco manufactures.....	4	2	1			1	
Paper and printing.....	12	3	3	4	1	1	
Chemicals and allied products.....	1	1					
Rubber products.....	5	1	1	1	2		
Miscellaneous manufacturing.....	21	5	7	7	2		
<i>Nonmanufacturing</i>							
Extraction of minerals.....	11	5	3	2	1		
Transportation and communication.....	28	18	6	1	2	1	
Trade.....	30	20	5	5			
Domestic and personal service.....	21	12	3	5		1	
Professional service.....	3	2		1			
Building and construction.....	39	15	13	5	3	1	2
Agriculture, etc.....	5	5					
W. P. A., relief, and resettlement projects.....	14	5	5	2	2		
Other nonmanufacturing industries.....	18	8	5	2	2	1	

Employers and representatives of organized workers successfully negotiated settlements of 47 percent of the strikes ending in April. Nearly 40 percent of the total number of workers were in this group of strikes. In 35 percent of the strikes, including 54 percent of the workers, settlements were negotiated with the assistance of Government conciliators or labor boards. Ten percent of the strikes, as shown at the end of table 6, were terminated without formal settlements. In most of these cases the workers simply dropped their demands and returned to work without settlements or they lost their jobs entirely when the employers went out of business or hired new workers to fill the places of the strikers.

TABLE 6.—*Methods of Negotiating Settlements of Strikes Ending in April 1937*

Negotiations toward settlements carried on by—	Strikes		Workers involved	
	Number	Percent of total	Number	Percent of total
Total.....	462	100.0	259,543	100.0
Employers and workers directly.....	21	4.5	3,036	1.2
Employers and representatives of organized workers directly.....	218	47.2	102,008	39.3
Government conciliators or labor boards.....	161	34.8	139,865	53.8
Private conciliators or arbitrators.....	16	3.5	3,532	1.4
Terminated without formal settlement.....	46	10.0	11,102	4.3

Results of the strikes ending in April, as measured in terms of relative gains to the workers, are indicated in table 7. About 55 percent of the strikes, including 62 percent of the workers, resulted in substantial gains to the workers. Twenty-nine percent of the strikes, including 27 percent of the workers, resulted in partial gains or compromises and 14 percent of the strikes, including 10 percent of the workers, resulted in little or no gains to the workers.

TABLE 7.—*Results of Strikes Ending in April 1937*

Results	Strikes		Workers involved	
	Number	Percent of total	Number	Percent of total
Total.....	462	100.0	259,543	100.0
Substantial gains to workers.....	253	54.8	162,043	62.4
Partial gains or compromises.....	133	28.8	69,226	26.7
Little or no gains to workers.....	63	13.6	25,050	9.7
Jurisdiction, rival union, or faction settlements.....	13	2.8	3,224	1.2

The data in table 8, which shows results of the strikes ending in April in relation to the major issues involved, indicate that the union-organization strikes were more successful from the workers' standpoint than the strikes over wages and hours. The workers won 62 percent, compromised 24 percent, and lost 14 percent of the strikes over union-organization matters. They won 52 percent, compromised 36 percent, and lost 12 percent of the wage-and-hour strikes. Seventy-one percent of the workers in the strikes over union-organization matters obtained substantial gains, 22 percent obtained compromises, and 7 percent obtained little or no gains as a result of their strikes. In the wage-and-hour strikes 44 percent of the workers obtained substantial gains, 33 percent obtained compromises, and 23 percent obtained little or nothing.

TABLE 8.—Results of Strikes Ending in April 1937, in Relation to Major Issues Involved

Major issues	Totals	Strikes resulting in—			
		Substantial gains to workers	Partial gains or compromises	Little or no gains to workers	Jurisdiction, rival union, or faction settlements
Number of strikes					
All issues.....	462	254	132	63	13
Wages and hours.....	169	88	61	20	
Wage increase.....	113	56	41	16	
Wage decrease.....	6	2	3	1	
Wage increase, hour decrease.....	47	28	16	3	
Hour decrease.....	3	2	1		
Union organization.....	249	154	60	35	
Recognition.....	45	28	5	12	
Recognition and wages.....	61	40	14	7	
Recognition and hours.....	1	1			
Recognition, wages, and hours.....	105	64	30	11	
Closed shop.....	22	13	5	4	
Discrimination.....	12	6	5	1	
Other.....	3	2	1		
Miscellaneous.....	44	12	11	8	13
Rival unions or factions.....	7				7
Jurisdiction.....	6				6
Other.....	31	12	11	8	
Number of workers involved					
All issues.....	259,543	162,051	69,218	25,050	3,224
Wages and hours.....	44,378	19,576	14,768	10,034	
Wage increase.....	30,863	15,511	7,558	7,794	
Wage decrease.....	2,869	150	2,704	15	
Wage increase, hour decrease.....	10,413	3,822	4,366	2,225	
Hour decrease.....	233	93	140		
Union organization.....	198,001	139,972	43,891	14,138	
Recognition.....	101,211	96,354	542	4,315	
Recognition and wages.....	33,071	12,024	19,277	1,770	
Recognition and hours.....	40	40			
Recognition, wages, and hours.....	36,628	24,447	7,365	4,816	
Closed shop.....	8,109	3,784	1,140	3,185	
Discrimination.....	4,114	3,245	817	52	
Other.....	14,828	78	14,750		
Miscellaneous.....	17,164	2,503	10,559	878	3,224
Rival unions or factions.....	2,941				2,941
Jurisdiction.....	283				283
Other.....	13,940	2,503	10,559	878	

CONCILIATION WORK OF THE DEPARTMENT OF LABOR, JUNE 1937

DURING June 1937, conciliators of the Department of Labor mediated in 157 disputes involving directly and indirectly about 106,202 workers. This mediation service was requested by one or both parties to the disputes. Some of these disputes had already developed into strikes before the Department of Labor was requested

to intervene. In others, strikes were threatened but had not yet taken place. In some cases, although no strike was immediately threatened, a controversy between employer and workers had developed to such a stage that an outside mediator was deemed necessary.

The Department of Labor conciliators were successful in adjusting 67 of these 157 disputes, while 64 were still pending at the close of the month. Two were settled by the disputants without aid of a conciliator, 18 were referred to the National Labor Relations Board, and 6 could not be adjusted.

These disputes were located among 27 different States and the District of Columbia (table 1). Workers involved in the disputes are classified in table 2.

TABLE 1.—Disputes Handled by Conciliators, June 1937, in Each State

State	Total disputes		Threatened strikes and controversies		Strikes	
	Number	Workers involved	Number	Workers involved	Number	Workers involved
Alabama.....	3	353	2	103	1	250
California.....	10	6,930	5	800	5	6,130
Connecticut.....	1	380			1	380
Delaware.....	1	300			1	300
District of Columbia.....	1	10	1	10		
Florida.....	3	11,881	1	10,431	2	1,450
Georgia.....	1	327	1	327		
Illinois.....	4	1,044	3	864	1	180
Iowa.....	2	1,165	2	1,165		
Kentucky.....	3	482	1	300	2	182
Maryland.....	4	5,235			4	5,235
Massachusetts.....	7	1,955	4	1,005	3	950
Michigan.....	4	2,725	3	1,192	1	1,533
Minnesota.....	1	200			1	200
Missouri.....	5	1,372			5	1,372
Montana.....	1	65			1	65
Nebraska.....	4	3,746	2	150	2	3,596
New Jersey.....	6	1,790	1	160	5	1,630
New York.....	13	18,353	6	5,540	7	12,813
Ohio.....	8	8,878	6	8,723	2	155
Pennsylvania.....	30	18,301	6	7,451	24	10,850
South Dakota.....	1	(¹)	1	(¹)		
Tennessee.....	14	5,654	1	403	13	5,251
Texas.....	5	536	3	390	2	146
Virginia.....	3	2,539	3	2,539		
Washington.....	2	8,022	1	8,000	1	22
Wisconsin.....	4	290	4	290		
Wyoming.....	2	33	2	33		
Total.....	157	106,202	65	50,653	92	55,549

¹ Exact number not known.

TABLE 2.—*Disputes Handled by Conciliators, by Craft of Workers Involved, June 1937*

Craft	Total disputes		Threatened strikes and controversies		Strikes	
	Number	Workers involved	Number	Workers involved	Number	Workers involved
Automobile workers.....	6	3,617	4	832	2	2,785
Building trades.....	12	2,001	7	1,106	5	895
Brick and clay workers.....	2	222			2	222
Chemical workers.....	4	295			4	295
Clerks.....	3	74	1	20	2	54
Clothing workers.....	5	5,462	2	3,950	3	1,512
Drivers.....	13	8,382	6	679	7	7,703
Food handlers.....	18	21,356	7	11,889	11	9,467
Furniture workers.....	6	2,867	4	2,505	2	362
Hotel workers.....	3	¹ 200	1	(¹)	2	200
Leather workers.....	2	1,000			2	1,000
Machinists and mechanics.....	29	11,555	14	5,891	15	5,664
Newspaper workers.....	4	5,201	2	237	2	4,964
Oil workers.....	5	429	3	183	2	246
Rubber workers.....	3	¹ 200	2	200	1	(¹)
Ship workers.....	3	8,495	1	125	2	8,370
Steel, iron, and tin.....	7	12,115	2	8,500	5	3,615
Stone workers.....	2	407	1	327	1	80
Timber workers.....	3	2,276	2	743	1	1,533
Warehousemen.....	5	1,890	1	40	4	1,850
Miscellaneous.....	20	17,408	5	13,426	15	3,982
Total.....	157	106,202	65	50,653	92	55,549

¹ Exact number not known.

Labor Turn-Over

LABOR TURN-OVER IN MANUFACTURING ESTABLISHMENTS, MAY 1937

SLIGHTLY lower quit and discharge rates in May than in the preceding month were indicated by the Bureau of Labor Statistics' survey of labor turn-over in manufacturing establishments. The lay-off rate increased from 1.48 to 1.79 per 100 employees, and the total separation rate from 3.09 to 3.37. The accession rate declined from 4.04 to 3.56.

All Manufacturing

The Bureau of Labor Statistics' survey of labor turn-over covers more than 5,000 representative manufacturing establishments which in May employed nearly 2,600,000 workers. The rates represent the number of changes in personnel per 100 employees on the pay rolls during the month.

The rates shown in table 1 are compiled from reports received from representative plants in 144 industries. In a number of these industries the coverage is not as great as is desired. Some of these industries, where the sample is not representative, are canvassed each month in order to obtain reports including not less than 25 percent of the total number of employees in each industry.

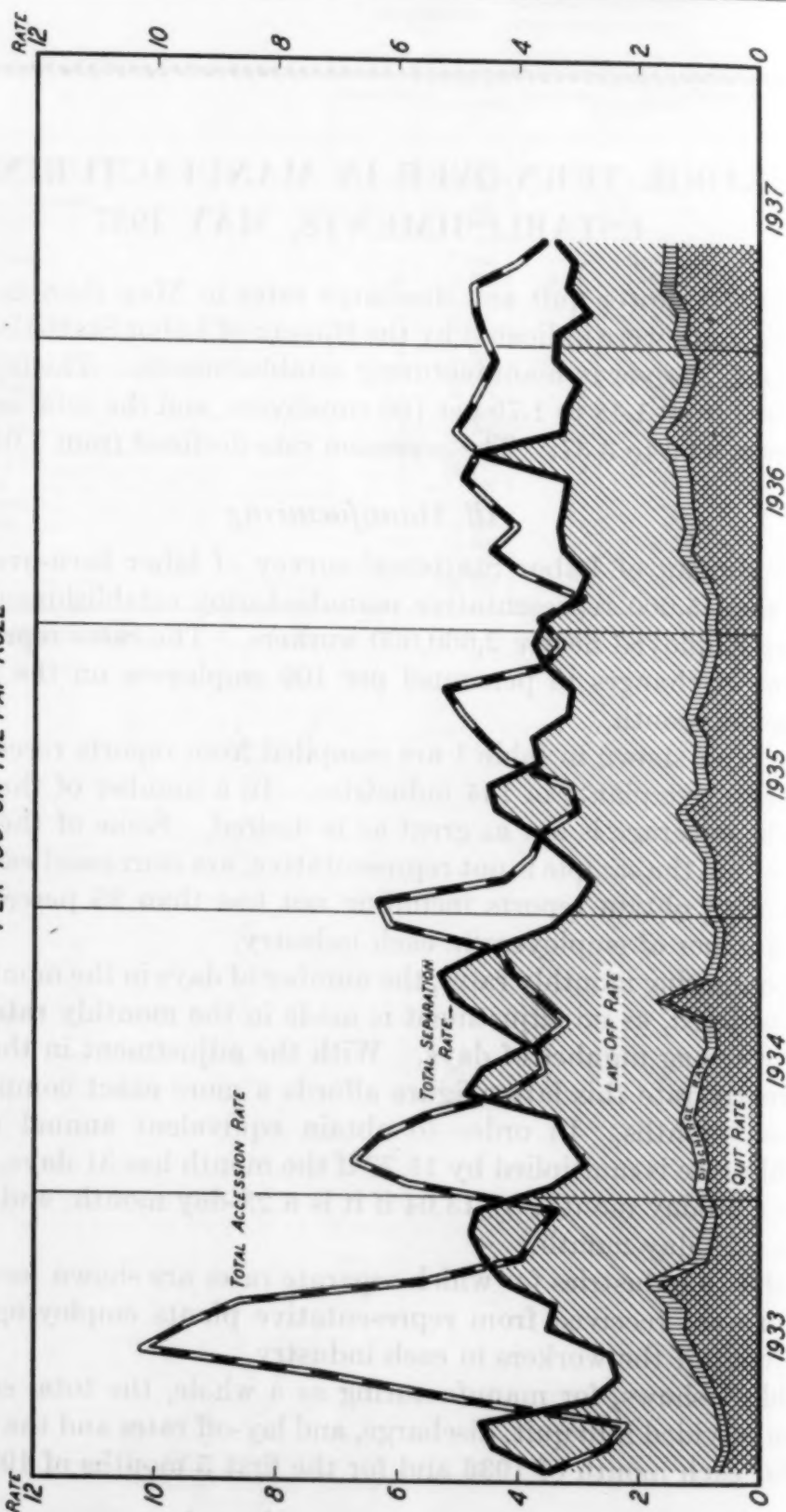
In comparing monthly rates, the number of days in the month should be considered, as no adjustment is made in the monthly rate because of the varying number of days. With the adjustment in the equivalent yearly rate this latter figure affords a more exact comparison as between months. In order to obtain equivalent annual rates the monthly rate is multiplied by 11.77 if the month has 31 days, by 12.17 if it is a 30-day month, by 13.04 if it is a 28-day month, and by 12.62 if it is a 29-day month.

In the 16 industries for which separate rates are shown (see table 2) reports were received from representative plants employing at least 25 percent of the workers in each industry.

Table 1 shows, for manufacturing as a whole, the total separation rate subdivided into quit, discharge, and lay-off rates and the accession rate for each month of 1936 and for the first 5 months of 1937.

LABOR TURN-OVER RATES IN MANUFACTURING

PER 100 ON THE PAY ROLL



UNITED STATES BUREAU OF LABOR STATISTICS

TABLE 1.—*Monthly Labor Turn-Over Rates (per 100 Employees) in Representative Factories in 144 Industries*

Class of rate and year	January	February	March	April	May	June	July	August	September	October	November	December	Average
Quit rate:													
1937.....	1.27	1.19	1.43	1.38	1.37								
1936.....	.71	.68	.86	1.16	1.06	1.13	1.15	1.23	1.57	1.29	1.13	1.05	1.09
Discharge rate:													
1937.....	.21	.22	.24	.23	.21								
1936.....	.20	.17	.19	.21	.20	.23	.23	.27	.26	.24	.21	.22	.22
Lay-off rate: ¹													
1937.....	1.90	1.44	1.53	1.48	1.79								
1936.....	2.66	2.21	1.83	1.92	2.06	1.92	1.84	3.23	1.47	1.72	1.70	2.14	2.06
Total separation rate:													
1937.....	3.38	2.85	3.20	3.09	3.37								
1936.....	3.57	3.06	2.88	3.29	3.32	3.28	3.22	4.73	3.30	3.25	3.04	3.41	3.37
Accession rate:													
1937.....	4.60	4.71	4.74	4.04	3.56								
1936.....	3.65	2.95	3.97	4.46	4.05	4.49	4.94	4.72	5.09	4.83	4.60	4.41	4.35

¹ Including temporary, indeterminate, and permanent lay-offs.

Sixteen Industries

In addition to the information for manufacturing as a whole, detailed labor turn-over rates are available for 16 separate manufacturing industries.

Turn-over rates in May in the rubber-tire industry were lower than in any of the industries for which separate rates are shown. The total separation rate was 1.64 per 100 employees and the accession rate 1.02. Sawmills reported the highest accession rate (7.84) and slaughtering and meat packing the highest total separation rate (6.19). The lowest quit rate (0.43) was shown in the petroleum-refining industry, and the highest (2.88) in sawmills. The highest discharge rate (0.41) was indicated in furniture manufacturing; men's clothing reported the lowest (0.04). The iron and steel industry registered the lowest lay-off rate (0.53), and slaughtering and meat packing the highest (5.07).

TABLE 2.—Monthly Turn-Over Rates (per 100 Employees) in Specified Industries

Class of rates	May 1937	April 1937	May 1936	May 1937	April 1937	May 1936	May 1937	April 1937	May 1936
	Automobiles and bodies			Automobile parts			Boots and shoes		
Quit.....	1.41	1.59	1.58	1.92	3.07	1.76	1.06	1.45	0.75
Discharge.....	.17	.18	.29	.35	.42	.42	.19	.23	.16
Lay-off.....	1.81	1.58	2.06	2.92	4.04	2.91	4.78	2.47	2.64
Total separation.....	3.39	3.35	3.93	5.19	7.53	5.09	6.03	4.15	3.55
Accession.....	3.09	7.63	3.84	5.53	9.93	5.12	2.62	1.77	1.34
	Brick			Cigars and cigarettes			Cotton manufacturing		
Quit.....	1.22	1.60	1.34	2.29	1.90	1.50	1.57	2.12	1.22
Discharge.....	.32	.29	.32	.10	.17	.23	.33	.26	.29
Lay-off.....	2.53	1.79	2.43	1.16	1.08	1.13	2.46	1.25	3.25
Total separation.....	4.07	3.68	4.09	3.55	3.15	2.86	4.36	3.63	4.76
Accession.....	4.92	8.35	7.78	2.46	3.09	2.68	9.20	3.66	3.46
	Electrical machinery			Foundries and machine shops			Furniture		
Quit.....	0.99	1.03	0.91	1.39	1.58	1.59	2.48	2.03	1.73
Discharge.....	.19	.19	.11	.33	.34	.28	.41	.42	.37
Lay-off.....	.67	.46	.74	1.11	1.17	1.65	2.18	2.11	1.97
Total separation.....	1.85	1.68	1.76	2.83	3.09	3.52	5.07	4.56	4.07
Accession.....	4.33	6.00	5.42	4.34	5.36	4.74	5.13	3.86	7.27
	Hardware			Iron and steel			Men's clothing		
Quit.....	1.93	2.24	1.28	1.04	1.20	0.97	1.15	1.13	0.92
Discharge.....	.19	.29	.29	.09	.10	.09	.04	.10	.05
Lay-off.....	1.23	1.42	.54	.53	.86	.61	4.76	3.05	3.88
Total separation.....	3.35	3.95	2.11	1.66	2.16	1.67	5.95	4.28	4.85
Accession.....	3.36	6.72	2.25	2.86	3.42	3.99	2.15	2.58	5.64
	Petroleum refining			Rubber tires			Sawmills		
Quit.....	0.43	0.41	0.76	0.70	0.80	0.55	2.88	2.64	1.89
Discharge.....	.06	.05	.07	.09	.12	.05	.29	.32	.35
Lay-off.....	2.06	1.84	2.31	0.85	.17	.68	2.35	2.66	3.65
Total separation.....	2.55	2.30	3.14	1.64	1.09	1.28	5.52	5.62	5.89
Accession.....	4.06	4.37	3.53	1.02	1.51	4.76	7.84	8.31	8.51
	Slaughtering and meat packing								
Quit.....	0.89	0.80	1.12						
Discharge.....	.23	.16	.25						
Lay-off.....	5.07	4.74	4.96						
Total separation.....	6.19	5.70	6.33						
Accession.....	5.70	5.95	9.21						

National Income

NATIONAL INCOME, 1936

THE upward trend in national income produced, that began in 1933, continued through 1936, according to recent estimates of the United States Department of Commerce.¹ The gain in 1936 over the previous year from 55 to 63.8 billion dollars was the largest for any 1 year in the recovery period. Of the 62,056 million dollars of income paid out in 1936, total compensation of employees represented 41,250 million dollars, including 2,058 million dollars in work-relief wages. On a percentage basis, such compensation made up a fractionally higher proportion of the national income paid out than in 1935 and was higher than for any other year covered by the survey since 1929. Per-capita annual income of all employees covered by the survey averaged \$1,244. As the cost-of-living and wholesale-price indexes of the United States Bureau of Labor Statistics showed only a slight increase in 1936 over 1935, the authors of the national income report conclude that the 16-percent increase in income produced and the 14-percent increase in income paid out "reflect a substantially higher physical volume of commodities and services produced and a much enlarged real purchasing power of individuals."

In making its annual estimates of national income, the Department of Commerce draws upon many agencies. As new data and methods become available, figures for earlier years are revised. Therefore each successive report may show minor changes in the figures for previous periods. The net value of all commodities produced and services rendered in a given year is known as the "national income produced." Sums paid out for personal effort or for furnishing capital are termed "national income paid out." When income produced exceeds the amounts paid out, the balance is called "positive business savings", and when the contrary situation results, the deficit is regarded as "negative business savings."

Each of the 12 industrial groups for which income figures are computed showed an absolute increase in income produced in 1936 over the previous year. Income produced by all classes in 1936 represented 79.0 percent of the 1929 level, and the following groupings showed a higher percent of the 1929 level than the 12 industries taken together:

¹ Bureau of Foreign and Domestic Commerce. Division of Economic Research. National income gain in 1936 largest of recovery period. (Reprinted from Survey of Current Business, June 1937.)

Government, including work-relief wages (142.9); electric light and power and gas (85.6); service (83.3); and agriculture (82.1). The ratio for the following industries was lower than for all 12 taken together: Communication (76.7), manufacturing (76.1), trade (74.8), finance (71.6), transportation (68.6), mining (61.8), and construction (33.2). Although the construction industry was lagging far behind others in 1936, its position had materially improved over that existing in 1935, when the income produced was only one-fourth of that produced by the same industry in 1929.

In table 1, national income paid out by type of payment is given for 1929 and each of the years 1932 to 1936, inclusive. The first section shows the amounts paid for each class and the second gives percentages represented by these payments for each of the years as compared with 1929.

TABLE 1.—National Income Paid Out, by Type of Payment, 1929 and 1932–36

Item	Amount (in millions of dollars)						Percent of 1929				
	1929	1932	1933	1934	1935	1936	1932	1933	1934	1935	1936
Total income paid out.....	78, 174	48, 487	44, 907	51, 004	54, 645	62, 056	62. 0	57. 4	65. 2	69. 9	79. 4
Total compensation of employees.....	51, 204	31, 013	29, 296	33, 842	36, 318	41, 250	60. 6	57. 2	66. 1	70. 9	80. 6
Salaries (selected industries) ¹	5, 667	3, 456	3, 072	3, 473	3, 621	4, 130	61. 0	54. 2	61. 3	63. 9	72. 9
Wages (selected industries) ¹	16, 852	6, 798	6, 971	8, 814	9, 828	11, 369	40. 3	41. 4	52. 3	58. 3	67. 5
Salaries and wages (all other industries).....	27, 750	19, 661	17, 678	19, 264	20, 587	22, 622	70. 9	63. 7	69. 4	74. 2	81. 5
Work relief wages ².....	.....	.....	611	1, 395	1, 273	2, 058	.....	.....	.....	.....	.....
Other labor income.....	936	1, 098	963	897	1, 009	1, 071	117. 3	102. 9	95. 8	107. 8	114. 4
Total dividends and interest ³	11, 209	7, 930	7, 016	7, 375	7, 588	8, 892	70. 7	62. 6	65. 8	67. 7	79. 3
Dividends.....	5, 969	2, 749	2, 213	2, 686	3, 072	4, 573	46. 1	37. 1	45. 0	51. 5	76. 6
Interest.....	5, 089	4, 930	4, 634	4, 595	4, 467	4, 378	96. 9	91. 1	90. 3	87. 8	86. 0
Entrepreneurial withdrawals.....	12, 342	8, 081	7, 258	8, 160	8, 891	9, 783	65. 5	58. 8	66. 1	72. 0	79. 3
Net rent and royalties.....	3, 419	1, 463	1, 337	1, 627	1, 848	2, 131	42. 8	39. 1	47. 6	54. 1	62. 3

¹ Includes mining, manufacturing, construction, steam railroads, Pullman, railway express, and water transportation.

² Includes pay rolls and maintenance of C. C. C. enrollees and pay rolls of C. W. A., F. E. R. A., and The Works Program projects, plus administrative pay rolls outside of Washington, D. C., for all

except The Works Program. Area office employees and their pay rolls under The Works Program are included with the regular Government employment and pay-roll figures.

³ Includes also net balance of international flow of property income.

National income paid out in selected industries (mining, manufacturing, construction, steam railroads, Pullman, railway express, and water transportation) in salaries and wages increased materially for both groups in 1936 over 1935, but the ratio of the wages paid in 1936 to the 1929 level (67.5 percent) was not so high as that of the salaries paid (72.9 percent). Salaries and wages in other industries were nearer to the 1929 level (81.5 percent), and this group represented over half of the income paid out in salaries and wages—that is, 22,622 million out of a total of 41,250 million dollars. Work-relief wages reached their highest point in 1936 when the aggregate paid out was 2,058 million dollars as compared with 1,273 million dollars the previous year.

Statistics of number of employees and per-capita income of employees are given in table 2.

TABLE 2.—*Number of Employees¹ and Their Per-Capita Income, 1929 and 1932-36*

Item	Number of employees (in thousands)					
	1929	1932	1933	1934	1935	1936
All employees ²	34,669	25,633	25,627	27,810	28,690	30,644
Salaried employees (selected industries) ³	2,213	1,615	1,503	1,654	1,665	1,770
Wage earners (selected industries) ³	12,084	7,254	7,726	8,854	9,266	9,955
Salaried employees or wage earners (all other industries).....	20,372	16,764	16,397	17,301	17,759	18,919
Per-capita income of employees						
All employees ²	\$1,450	\$1,167	\$1,082	\$1,135	\$1,186	\$1,244
Salaried employees (selected industries) ³	2,560	2,140	2,043	2,099	2,174	2,333
Wage earners (selected industries) ³	1,395	937	902	995	1,061	1,142
Salaried employees or wage earners (all other industries).....	1,362	1,173	1,078	1,113	1,159	1,196

¹ The estimates of the number employed are averages for the year and represent full-time equivalent numbers for industries in which data permit such adjustments.

² Does not include employers and self-employed persons, such as farmers, merchants, independent

professional practitioners, etc., nor work-relief employees and unpaid family farm labor.

³ Includes mining, manufacturing, construction, steam-railroads, Pullman, railway express, and water transportation.

In terms of 1929 conditions, the total number of employees in 1936 represented 88.4 percent, and the 1936 per-capita income 85.8 percent. The gain in number of employees from 1935 to 1936 was slightly larger than the gain in per-capita income. Wage earners in selected industries had a per-capita income of \$1,142, as compared with \$1,061 in the previous year, and \$1,395 in 1929. In terms of the low per-capita wages of 1933 (\$902), the 1936 average represented a substantial gain.

Wages and Hours of Labor

ANNUAL INCOME IN THE ENGINEERING PROFESSION, 1929 TO 1934¹

Part 1.—Income from all Sources

REPORTS from 52,589 professional engineers to the Bureau of Labor Statistics, in its survey of the engineering profession,² undertaken at the request of the American Engineering Council, make it possible to relate the income data to many aspects of professional engineering activity. These income data are probably the most comprehensive ever presented in regard to a professional group. The following general findings appear from analysis of the reports.

In 1929, 50 percent of the 30,032 reporting engineers earned more than \$3,412, and 50 percent earned less than that amount. Twenty-five percent earned more than \$5,012, but only 10 percent had incomes in excess of \$7,466 per annum. On the other hand, 25 and 10 percent of the engineers earned respectively less than \$2,509 and \$1,878 per year.

Comparison of the incomes for 1932 and 1934 with those reported for 1929 shows that from 1929 to 1934, the sharpest absolute declines occurred in the two higher income groups. Their percentage decreases were least, however, averaging 31.2 and 31.6 percent, whereas the middle values of income declined by 33 percent, and the two lower levels by 41.3 and 53.6 percent, respectively.

Almost two-thirds of these decreases in earned annual income occurred between 1929 and 1932. There were further decreases from 1932 to 1934.

Among the several professional classes, the divergences in earning capacities were most marked in the higher levels of income. Furthermore, the ranking of the profession on the basis of earnings opportunity was the same in the highest 10 and 25 percent only.

In 1929, without regard to the age distributions of the different classes 10 percent of the mining and metallurgical engineers earned more than \$9,912 per year, chemical and ceramic engineers ranked second with

¹ Prepared by Andrew Fraser, Jr., of the Bureau's Division of Wages, Hours, and Working Conditions.

² This is the fifth of a series of summary articles covering the results of the survey. For information on educational qualifications and unemployment in the engineering profession, see *Monthly Labor Review*, June 1936 and January 1937, respectively.

Summary data on employment in the engineering profession, 1929 to 1934, were given in the April 1937 issue, while security of employment in the engineering profession was discussed in the May 1937 issue. The detailed information will be published in bulletin form.

10 percent earning more than \$9,103, and were followed in order by mechanical and industrial engineers (\$8,508), electrical engineers (\$7,185), and civil engineers (\$6,507). At the upper 25 percent level, mining and metallurgical engineers reported earnings of \$6,301 per year, and those of the other professional classes ranged from 4 percent lower for chemical and ceramic engineers to 28 percent lower for civil engineers. This order of professional classes was also maintained in 1932 and 1934.

In 1929, the earnings of the mining and metallurgical engineers were highest in the middle and two lower levels of income, while those of the electrical engineers were lowest. At these three levels, the earnings of the former were \$4,010, \$2,839, and \$1,985; for the latter they were \$3,277, \$2,339, and \$1,662. Over these three levels, the relative positions of the three remaining professional classes changed. There were further shifts in 1932 and 1934.

The data also show that, over the period 1929 to 1934, relatively the smallest shrinkages in earnings were reported by the civil engineers, while the chemical and ceramic engineers suffered the greatest cuts. Over the five income levels, the former ranged from 29.0 to 47.2 percent, the latter from 35.6 to 63.8 percent.

Analysis of the income data reported by all engineers in 1929, 1932, and 1934 shows that earnings advanced with age in three distinct phases, showing initial periods of exceptionally rapid rise, followed by two others of slower rates of increase. The age spans of these phases varied with the income level.

With advancing age, the spread in earnings became most accentuated beyond the age of 38. Thus, at the ages of 44 and 60, the incomes of the upper 25 percent differed from the median or middle value by 41.0 and 51.0 percent. The corresponding incomes of the upper 10 percent at these ages were greater than the median by 116.0 and 157.0 percent. Even in 1932 and 1934, this advantage in earning capacity was maintained.

The earnings of the engineers in the lower income levels ceased to increase at a relatively early age. These showed a level period before beginning to decline, whereas the higher levels of income showed continuous increases for a considerably longer period, after which, however, they declined at a much greater rate.

Over the period 1929 to 1934, a rise in earnings occurred for the youngest engineers who were in the profession in 1929 and who were 30 years of age or less in 1934. Thereafter there were progressively larger declines for the older engineers.

Comparison of the earnings of engineers of identical ages in 1929 and 1934 shows that the average income of engineers who had been out of college for 2 years declined 43 percent. The income of those who had been out 5 years declined 35 percent. For older engineers the decline approximated 30 percent.

Consideration of the incomes reported by engineers of different educational backgrounds shows that those with a formal engineering education did receive a higher income. The differentials in earnings, however, did not accrue in equal measure for all five professional classes.

At about 28 years of age the "other" engineers had lost an initial advantage in earning capacity. At that point, the 1929 earnings of the graduates ranged from \$2,725 to \$3,000 per year, and those of the corresponding "other" engineers from \$2,430 to \$2,650.

With advancing age, the spreads in earnings in favor of the graduates became very marked indeed. For example, at 5, 20, and 37 years after graduation, the earnings of first-degree mechanical and industrial engineers exceeded by \$175, \$925, and \$1,322 per year those of the engineers of the same professional class whose college course was incomplete, and surpassed by \$225, \$1,160, and \$1,815 per year those of engineers with a noncollegiate technical school education.

Even in the graduate groups there was variation in the increase in earning capacity among the several professional classes. Thus, the 1929 earnings of first-degree civil engineers who had been out of college for 5 years were only \$2,050 less than the earnings of those who had graduated 30 years before, whereas the corresponding difference for chemical and ceramic engineers was \$3,600. The ranges in earnings of the remaining graduate groups fell between those reported by the civil and the chemical and ceramic engineers.

In general, the earnings of the "other" engineers ceased to increase at an earlier age than those of the graduates.

Scope and Method of Study

Analysis was made to determine the changes in the income and earnings of professional engineers during the period 1929 to 1934. The reports covered two distinct features of income for the years 1929, 1932, and 1934: (1) Earned annual income received from all personal services, and (2) average monthly compensation from engineering work only. The annual figures are a measure of what engineers were able to earn during each of the three years. This was determined not only by the rate of earnings but also by the volume of employment. The monthly figures are a measure of the rates at which engineering services were purchased.

Both income and earnings are shown in relation to (1) professional class, (2) age, (3) type of education, and (4) regional location. A discussion of earned annual income from all sources, by age, is included for engineers engaged in engineering work and also for those in non-engineering work, as well as annual incomes reported by those en-

engineers who were unemployed at the end of 1929, 1932, and 1934. Monthly engineering earnings, while treated similarly to annual income, can be shown only for the various types of engineering employment. The earnings of those engaged in engineering work are also shown in relation to size of city.

From a consideration of certain pertinent aspects affecting the returns on income and earnings for 1929, 1932, and 1934, it is believed that these data are representative of the engineering profession as a whole. They have been shown to be representative as regards age, if allowance is made for the larger representation of engineers graduating in 1930 or later years. In analyzing the income data, as in the analysis of employment status, the samples of older and younger engineers³ were combined on an adjusted basis to secure a cross section of the entire profession in 1932 and 1934.⁴

Without exception, the several distributions of income follow a consistent pattern even when analyzed in detail. Thus, the same type of distribution emerges when the data are analyzed by ages, by professional classes, or even on a regional basis. This is true of both annual income and monthly engineering income.

The averages proved to be essentially the same, whether derived from a "gross" or "net" number reporting. The "gross" number reporting income is the total number of engineers who reported income in any one year, irrespective of whether or not they reported in other years. The "net" number reporting income is the number who furnished information for all three years—1929, 1932, and 1934.⁵ In the income tables averages are derived from the "gross" numbers reporting.

The "gross" numbers reporting earned annual income for 1934 and the "net" numbers are shown compared in table 1. These numbers are the totals of those returning questionnaires before any adjustment is made in the number of the younger men.

³ Older engineers comprised 15 percent of all those who were professionally active prior to 1930. The age composition of this group was consistently uniform with the corresponding data derived from the 1930 census on professional engineers. This was so for minor groupings of professional classes by 10 geographical regions and for the country as a whole. The younger engineers included the information furnished by all those who entered the profession in the years 1930-34 inclusive. The returns for each of these years covered the same proportions (32.0 percent) of the total number of graduations reported by the Office of Education.

⁴ The procedure of adjustment adopted was similar

to that outlined in the discussion of the distributions of employment status. The numbers of younger engineers reporting in each income class for 1932 and 1934 were reduced in the ratio of 15 to 32, and added to the corresponding figures reported by the older engineers in 1932 and 1934.

⁵ In the case of the 1930-32 graduates and "other" engineers born in 1907-09, the net number reporting income is the number furnishing data for the 2 years 1932 and 1934. In the case of the 1933-34 graduates and 1910-14 "other" engineers, income data for 1934 alone were relevant. Hence, there is no difference between "gross" and "net" data.

TABLE 1.—Comparison of Gross and Net Numbers of Older¹ and Younger² Graduate and "Other" Engineers Reporting Annual Earnings in 1934

[Without regard to employment status reported]

Professional class	Graduate engineers				Other engineers			
	Total	Older group	Younger group graduated in—		Total	Older group	Younger group born in—	
			1930-32	1933-34			1907-09	1910-14
	Number							
All classes:								
Number reporting in survey.....	43,288	24,837	11,039	7,412	9,301	8,440	575	286
Gross number reporting income.....	38,513	22,178	10,201	6,134	8,277	7,513	523	241
Net number reporting income....	33,720	20,376	7,210	6,134	7,569	6,871	457	241
Chemical and ceramic:								
Number reporting in survey.....	3,697	1,453	1,257	987	203	158	27	18
Gross number reporting income.....	3,270	1,285	1,169	816	177	137	27	13
Net number reporting income.....	2,749	1,150	783	816	156	124	19	13
Civil, agricultural, and architectural:								
Number reporting in survey.....	16,114	10,318	3,596	2,198	4,712	4,341	256	115
Gross number reporting income.....	14,562	9,344	3,369	1,849	4,275	3,941	233	101
Net number reporting income....	12,984	8,596	2,539	1,849	3,915	3,603	211	101
Electrical:								
Number reporting in survey.....	9,924	5,184	2,947	1,793	1,519	1,285	156	78
Gross number reporting income.....	8,792	4,688	2,686	1,418	1,345	1,140	140	65
Net number reporting income.....	7,627	4,368	1,841	1,418	1,256	1,067	124	65
Mechanical and industrial:								
Number reporting in survey.....	11,643	6,599	2,851	2,193	2,590	2,407	124	59
Gross number reporting income.....	10,236	5,785	2,620	1,831	2,246	2,082	113	51
Net number reporting income....	8,923	5,271	1,821	1,831	2,035	1,889	95	51
Mining and metallurgical:								
Number reporting in survey.....	1,910	1,283	386	241	277	249	12	16
Gross number reporting income.....	1,653	1,076	357	220	234	213	10	11
Net number reporting income....	1,437	991	226	220	207	188	8	11
	Percent of number reporting in survey							
All classes:								
Gross number reporting income.....	89.0	89.3	92.4	82.8	89.0	89.0	91.0	84.3
Net number reporting income....	77.9	82.0	65.3	82.8	81.4	81.4	79.5	84.3
Chemical and ceramic:								
Gross number reporting income.....	88.5	88.4	93.0	82.7	87.2	86.7	100.0	72.2
Net number reporting income.....	74.4	79.1	62.3	82.7	76.8	78.5	70.4	72.2
Civil, agricultural, and architectural:								
Gross number reporting income.....	90.4	90.6	93.6	84.1	90.7	90.8	91.0	87.8
Net number reporting income....	80.6	83.3	70.6	84.1	83.1	83.0	82.4	87.8
Electrical:								
Gross number reporting income.....	88.6	90.4	91.1	79.1	88.5	88.7	89.7	83.3
Net number reporting income....	76.9	84.3	62.5	79.1	82.7	83.0	79.5	83.3
Mechanical and industrial:								
Gross number reporting income.....	87.9	87.7	91.9	83.5	86.7	86.5	91.1	86.4
Net number reporting income....	76.6	79.9	63.9	83.5	78.6	78.5	76.6	86.4
Mining and metallurgical:								
Gross number reporting income.....	86.5	83.9	92.5	91.3	84.5	85.5	83.3	68.8
Net number reporting income....	75.2	77.2	58.5	91.3	74.7	75.5	66.7	68.8

¹ Includes all engineers who were professionally active prior to 1930.² Includes all engineers who entered the profession in the years 1930-32 and 1933-34.

In each case, the base for computing percentages was the number reporting in the survey, that is, those engineers who reported a type of education.⁶ For all age groups, it will be noted that there were distinct differences between the "gross" and "net" percentages reporting income. The greatest divergences occurred among the 1930-32 graduate and the 1907-09 "other" engineers. For the country as a

⁶ The use of type of education as a base was felt to be justified because only 104 of the 52,589 professional engineers reporting in this survey did not report their type of education. The 104 engineers, how-

ever, did report their professional class; and either year of graduation or year of birth. They were, therefore, used for all purposes, except those dealing with type of education.

whole, these were respectively 27.1 and 11.5 percent. On a national basis, older graduates differed by 7.3 percent, older "other" engineers by 7.6 percent. Despite these variations, a comparison of the corresponding measures of levels of annual income derived from the "gross" and "net" returns showed no significant differences. A similar situation was noted for the "gross" and "net" returns on monthly engineering income.⁷

TABLE 2.—Comparison of Gross and Net Numbers of Older¹ and Younger² Graduate and "Other" Engineers Reported Monthly Engineering Income³ in 1934

[Without regard to employment status reported]

Professional class	Graduate engineers				Other engineers			
	Total	Older group	Younger group graduated in—		Total	Older group	Younger group born in—	
			1930-32	1933-34			1907-09	1910-14
	Number							
All classes:								
Number reporting in survey.....	43,288	24,837	11,039	7,412	9,301	8,440	575	286
Gross number reporting income....	31,574	19,814	7,405	4,355	7,504	6,860	447	197
Net number reporting income....	26,680	17,686	4,639	4,355	6,639	6,070	372	197
Chemical and ceramic:								
Number reporting in survey.....	3,697	1,453	1,257	987	203	158	27	18
Gross number reporting income....	2,568	1,151	842	575	141	116	16	9
Net number reporting income....	2,071	1,004	492	575	118	99	10	9
Civil, agricultural, and architectural:								
Number reporting in survey.....	16,114	10,318	3,598	2,198	4,712	4,341	256	115
Gross number reporting income....	12,929	8,593	2,817	1,519	3,996	3,691	212	93
Net number reporting income....	11,073	7,647	1,907	1,519	3,538	3,260	185	93
Electrical:								
Number reporting in survey.....	9,924	5,184	2,947	1,793	1,519	1,285	156	78
Gross number reporting income....	6,307	4,003	1,524	780	1,138	980	109	49
Net number reporting income....	5,376	3,678	918	780	1,041	898	94	49
Mechanical and industrial:								
Number reporting in survey.....	11,643	6,599	2,851	2,193	2,590	2,407	124	59
Gross number reporting income....	8,350	5,105	1,938	1,307	2,022	1,882	102	38
Net number reporting income....	6,994	4,511	1,176	1,307	1,765	1,648	79	38
Mining and metallurgical:								
Number reporting in survey.....	1,910	1,283	386	241	277	249	12	16
Gross number reporting income....	1,420	962	284	174	207	191	8	8
Net number reporting income....	1,166	846	146	174	177	165	4	8
	Percent of number reporting in survey							
All classes:								
Gross number reporting income....	72.9	79.8	67.1	58.8	80.7	81.3	77.7	68.9
Net number reporting income....	61.6	71.2	42.0	58.8	71.4	71.9	64.7	68.9
Chemical and ceramic:								
Gross number reporting income....	69.5	79.2	67.0	58.3	69.5	73.4	59.3	50.0
Net number reporting income....	56.0	69.1	39.1	58.3	58.1	62.7	37.0	50.0
Civil, agricultural, and architectural:								
Gross number reporting income....	80.2	83.3	78.3	69.1	84.8	85.0	82.8	80.9
Net number reporting income....	68.7	74.1	53.0	69.1	75.1	75.1	72.3	80.9
Electrical:								
Gross number reporting income....	63.6	77.2	51.7	43.5	74.9	76.3	69.9	62.8
Net number reporting income....	54.2	70.9	31.2	43.5	68.5	69.9	60.3	62.8
Mechanical and industrial:								
Gross number reporting income....	71.7	77.4	68.0	59.6	78.1	78.2	82.3	64.4
Net number reporting income....	60.1	68.4	41.2	59.6	68.1	68.5	63.7	64.4
Mining and metallurgical:								
Gross number reporting income....	74.3	75.0	73.6	72.2	74.7	76.7	66.7	50.0
Net number reporting income....	61.0	65.9	37.8	72.2	63.9	66.3	33.3	50.0

¹ Includes all engineers who were professionally active prior to 1930.

² Includes all engineers who entered the profession in the years 1930-32 and 1933-34.

³ In the text, "monthly engineering income" and "engineering income" are used interchangeably.

⁷ The income levels for the "gross" and "net" returns will be published as an appendix in the bulletin.

In the ensuing discussion, the middle values of income were computed for groups with at least 10 engineers reporting. For the upper and lower 25 percent groups or levels, the measures were based on not less than 50, while the upper and lower 10 percent groups embraced not less than 100 engineers.

Earned Annual Income

The income data for 1929 were furnished by 30,032 engineers, or slightly over 90 percent of all reporting engineers who were professionally active prior to 1930. These data, together with the adjusted figures on earned annual income, without regard to employment status reported, for 1932 and 1934, are shown in table 3.

TABLE 3.—Comparison of 5 Levels of Annual Earnings for all Professional Engineers Reporting in 1929, 1932, and 1934

[Figures derived from adjusted data as explained on p. 415, and without regard to employment status reported or type of education]

Percent at specified income level	Annual earnings of more than specified amount			Increase or decrease			Percent of change		
	1929	1932	1934	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34
10 percent.....	\$7,466	\$5,605	\$5,138	-\$2,328	-\$1,861	-\$467	-31.2	-24.9	-8.3
25 percent.....	5,012	3,827	3,429	-1,583	-1,185	-398	-31.6	-23.6	-10.4
50 percent.....	3,412	2,574	2,286	-1,126	-838	-288	-33.0	-24.6	-11.2
75 percent.....	2,509	1,698	1,473	-1,036	-811	-225	-41.3	-32.3	-13.3
90 percent.....	1,878	889	872	-1,006	-989	-17	-53.6	-52.7	-1.9

In 1929 the range in earned annual incomes among professional engineers was great. Some 60 reported incomes less than \$800 per year, while 162 earned more than \$19,000 a year. In 1929, without regard to their age distribution, half of the engineers had annual incomes greater than \$3,412, while half earned less than that figure. However, 25 percent earned more than \$5,012 per annum. Only 10 percent of the 30,032 reporting engineers had incomes in excess of \$7,466 per annum. On the other hand, one-quarter of all engineers reporting earned less than \$2,509 per year, and one-tenth earned less than \$1,878 per year.

From 1929 to 1934, marked decreases took place in the earned annual incomes of professional engineers. The sharpest absolute declines occurred in the higher income levels. Thus, in 1929, while the highest one-tenth of the engineers had earned more than \$7,466, in 1934 the earnings of this highest-paid tenth ranged down to \$5,138. The middle income declined from \$3,412 in 1929 to \$2,286 in 1934. However, the percentages of decrease for the highest 10 and 25 percent of reporting engineers were approximately the same, namely, 31.2 and 31.6 percent, respectively. The middle or average values of all incomes declined by 33.0 percent. At the lower income levels, the

absolute declines were almost as great as was the decline of the median earnings; but the percentage decreases were greater. This decrease at the lower levels reflects not only salary cuts, but also the low earnings of those with long periods of unemployment. In 1929, while the yearly earnings reported by the lowest 25 and 10 percent of the engineers were less than \$2,509 and \$1,878 respectively, by 1934 the former had decreased to \$1,473, the latter to \$872. The relative percentage decreases were greatest for these two lower income levels, namely, 41.3 and 53.6.⁸

TABLE 4.—*Comparison of 5 Levels of Annual Earnings for all Engineers Reporting in Each Professional Class in 1929, 1932, and 1934*

[Figures derived from adjusted data as explained on p. 415, and without regard to employment status reported or type of education]

Percent of professional class at specified income level ¹	Annual earnings of more than specified amount			Increase or decrease			Percent of change		
	1929	1932	1934	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34
10 percent:									
Mining and metallurgical.....	\$9,912	\$7,011	\$6,486	-\$3,426	-\$2,901	-\$525	-34.6	-29.3	-7.5
Chemical and ceramic.....	9,103	6,525	5,860	-3,243	-2,578	-665	-35.6	-28.3	-10.2
Mechanical and industrial.....	8,508	6,220	5,572	-2,936	-2,288	-648	-34.5	-26.9	-10.4
Electrical.....	7,185	5,785	5,220	-1,965	-1,400	-565	-27.3	-19.5	-9.8
Civil, agricultural, and architectural.....	6,507	5,086	4,561	-1,946	-1,421	-525	-29.9	-21.8	-10.3
25 percent:									
Mining and metallurgical.....	6,301	4,698	4,328	-1,973	-1,603	-370	-31.3	-25.4	-7.9
Chemical and ceramic.....	6,043	4,425	3,703	-2,340	-1,618	-722	-38.7	-26.8	-16.3
Mechanical and industrial.....	5,582	4,123	3,662	-1,920	-1,459	-461	-34.4	-26.1	-11.2
Electrical.....	4,806	3,770	3,410	-1,396	-1,036	-360	-29.0	-21.6	-9.5
Civil, agricultural, and architectural.....	4,508	3,579	3,266	-1,242	-929	-313	-27.6	-20.6	-8.7
50 percent:									
Mining and metallurgical.....	4,010	3,061	2,626	-1,384	-949	-435	-34.5	-23.7	-14.2
Chemical and ceramic.....	3,803	2,625	2,047	-1,756	-1,178	-578	-46.2	-31.0	-22.0
Mechanical and industrial.....	3,099	2,681	2,324	-1,375	-1,018	-357	-37.2	-27.5	-13.3
Civil, agricultural, and architectural.....	3,291	2,545	2,297	-994	-746	-248	-30.2	-22.7	-9.7
Electrical.....	3,277	2,509	2,218	-1,059	-768	-291	-32.3	-23.4	-11.6
75 percent:									
Mining and metallurgical.....	2,839	1,788	1,512	-1,327	-1,051	-276	-46.7	-37.0	-15.4
Mechanical and industrial.....	2,626	1,676	1,424	-1,202	-950	-252	-45.8	-36.2	-15.0
Chemical and ceramic.....	2,538	1,556	1,213	-1,325	-982	-343	-52.2	-38.7	-22.0
Civil, agricultural, and architectural.....	2,499	1,770	1,596	-903	-729	-174	-36.1	-29.2	-9.8
Electrical.....	2,339	1,634	1,343	-996	-705	-291	-42.6	-30.1	-17.8
90 percent:									
Mining and metallurgical.....	1,985	773	893	-1,092	-1,212	+120	-55.0	-61.1	+15.5
Mechanical and industrial.....	1,956	919	853	-1,103	-1,037	-66	-56.4	-53.0	-7.2
Civil, agricultural, and architectural.....	1,926	909	1,016	-910	-1,017	+107	-47.2	-52.8	+11.8
Chemical and ceramic.....	1,686	732	610	-1,076	-954	-122	-63.8	-56.6	-16.7
Electrical.....	1,662	873	731	-931	-789	-142	-56.0	-47.5	-16.3

¹ Arranged in ascending order of earned annual income for 1929.

Almost two-thirds of the decrease in earned annual incomes occurred between 1929 and 1932. This, it will be recalled, was coincident with the greatest declines in employment. There were further declines

⁸ It must be noted that errors of reporting account for part of the decline, at least in the lowest brackets for which comparison is made. The questionnaire called for earnings during the calendar years 1929 and 1934. An engineer graduating from college in either year would usually have had only a half year in which he earned. In both years, there is some evidence that annual rates were occasionally reported. Such over-reporting was more common for 1929 than 1934.

in the period 1932 to 1934. In general, the order of the absolute decreases and the percentages of change followed those which took place in the period 1929 to 1934, the one exception being that, between 1932 and 1934, there was only a 1.9 percent decline in the lowest income levels. The corresponding absolute decrease was \$17.

When these adjusted data on annual income were compared for all engineers reporting in the five professional classes, marked divergences in their respective earning capacities were revealed.

These differences in earning capacity within the several professional classes were greatest at the higher income levels. Thus, in 1929, nine-tenths of all electrical engineers earned \$1,662 or more, while a similar proportion of the mining and metallurgical engineers earned \$1,985. The range was \$323. For the middle values of income, a difference of \$733 was noted between the extremes of \$4,010 for mining and metallurgical and \$3,277 for electrical engineers. On the other hand, at the highest level, one-tenth of the mining and metallurgical engineers earned \$9,912 or more, whereas a corresponding proportion of civil engineers earned only \$6,507 or more. Clearly, it was in the higher income levels that the earning capacities of the several professional classes diverged the most, even in terms of percentages. Furthermore, this characteristic of greater variability among the professional classes at higher levels persisted in 1929, 1932, and 1934.

However, when the question is asked as to which professional class offers the greatest earnings, or which the lowest, the answer must be carefully qualified. In the first place, the averages shown in table 4 relate to the total number in the professional class. For example, 1,319 mining and metallurgical engineers reported incomes for 1929, and of these one-tenth, or 132, had incomes of \$10,000 or more. There were 13,424 civil, agricultural, and architectural engineers, of whom one-tenth, or 1,342, had incomes in excess of \$6,507. Therefore, it may be concluded that of every 1,000 engineers in either professional class, a larger proportion will earn \$10,000 in mining and metallurgical engineering than in civil engineering. But the total number of opportunities to earn \$10,000 were greater in civil engineering, much the larger of the two professional classes. Among the civil engineers reporting to the Bureau for 1929, there were 469 who indicated incomes of \$10,000 or more in 1929.

Again, the ranking of the profession on the basis of earnings opportunity relative to the number of engineers in the professional class was not the same at all levels and in all three periods. As regards the relative level of income for the highest 10 percent, and also the highest 25 percent, in each professional class, there was a constant relationship. Thus, in 1929, 10 percent of the mining and metallurgical engineers earned more than \$9,912. Chemical and ceramic engineers ranked second with 10 percent earning more than \$9,103, and were

followed in order by mechanical and industrial engineers (\$8,508), electrical engineers (\$7,185), and civil engineers (\$6,507). Relative to the mining and metallurgical engineers, the divergence was 8, 14, 27, and 33 percent. A similar divergence was noted between the lower limit of \$6,301 reported by the upper fourth of the mining and metallurgical engineers and those of the other professional classes. In 1929, these ranged from 4 percent in the case of chemical and ceramic (\$6,034) to 28 percent for the civil engineers (\$4,508). This order of professional classes was also maintained in 1932 and 1934.

In 1929, the relative order of the median professional incomes was the same as that just described, as regards mining, chemical, and mechanical engineers. But whereas the upper limit of the earnings of the lowest 25 percent of the electrical engineers exceeded that of a similar proportion of the civil engineers by 6.6 percent, at the median level the situation was reversed—half the civil engineers earned \$3,291 or more, whereas half the electrical engineers earned \$3,277 or more. This change in order persisted in 1932 and 1934.

In 1932 and 1934, the median earnings of mining and mechanical engineers led all the others. Chemical engineers were below mechanical engineers in 1932. The median earnings of chemical engineers were lower than the median of every other professional class in 1934.

At the lower levels the most marked shift in rank was that of civil engineers and chemical engineers. In 1929, one-quarter of the civil engineers earned less than \$2,499, exceeding only the comparable earnings of electrical engineers. But in 1932, civil engineers were in second place as regards the level of earnings of the lowest quarter of the profession, and in 1934 they were in first place. Even in 1929, the lowest 10 percent of the civil engineers had earned almost as much as the lowest 10 percent of the mining and mechanical engineers, and substantially exceeded the level of the lowest 10 percent of the chemical and electrical engineers. With reference to both the lowest 25 and 10 percent groups, chemical engineers' earnings came in last place in 1932 and 1934.

Further examination of the adjusted data in table 4, given without regard to age, demonstrates not only differences in earning capacity but also variations in the decreases in earned annual income over the period 1929 to 1934. Without exception, the greater part of all contractions in income reported occurred between 1929 and 1932, though there were further declines in the period 1932 and 1934.

Annual Income Related to Age

The effects of age upon earned annual incomes, for all professional engineers combined are presented in table 5.

TABLE 5.—Comparison of 5 Levels of Annual Earnings on Age Basis for all Engineers Reporting in 1929, 1932, and 1934

[Without regard to employment status reported or type of education]

Age	Year of graduation	Years after graduation	Proportion with annual earnings of more than specified amount				
			10 per cent	25 per cent	50 per cent	75 per cent	90 per cent
1929							
64 years and over.....	Prior to 1889.....	41 and over.....	\$9,999	\$6,942	\$4,427	\$3,005	\$1,904
56-63 years.....	1889-96.....	33-40.....	12,749	7,493	4,968	3,378	2,328
48-55 years.....	1897-1904.....	25-32.....	11,701	7,129	4,918	3,471	2,621
40-47 years.....	1905-12.....	17-24.....	9,913	6,473	4,588	3,403	2,683
36-39 years.....	1913-16.....	13-16.....	7,936	5,802	4,121	3,210	2,563
32-35 years.....	1917-20.....	9-12.....	6,520	4,850	3,674	3,004	2,448
28-31 years.....	1921-24.....	5-8.....	4,797	3,786	3,145	2,567	2,130
26-27 years.....	1925-26.....	3-4.....	3,621	3,099	2,550	2,149	1,827
24-25 years.....	1927-28.....	1-2.....	3,049	2,497	2,098	1,822	1,462
23 years.....	1929.....	0.....	2,330	1,922	1,313	882	478
1932							
67 years and over.....	Prior to 1889.....	44 and over.....	\$8,940	\$5,931	\$3,650	\$2,104	\$953
59-66 years.....	1889-96.....	36-43.....	9,318	6,167	3,959	2,462	964
51-58 years.....	1897-1904.....	28-35.....	8,350	5,753	3,832	2,525	1,219
43-50 years.....	1905-12.....	20-27.....	7,570	5,192	3,619	2,520	1,410
39-42 years.....	1913-16.....	16-19.....	6,395	4,592	3,385	2,475	1,478
35-38 years.....	1917-20.....	12-15.....	5,519	4,115	3,135	2,307	1,355
31-34 years.....	1921-24.....	8-11.....	4,287	3,386	2,677	2,025	1,229
29-30 years.....	1925-26.....	6-7.....	3,428	2,862	2,314	1,810	1,110
27-28 years.....	1927-28.....	4-5.....	2,970	2,452	2,020	1,504	876
26 years.....	1929.....	3.....	2,451	2,075	1,772	1,271	735
25 years.....	1930.....	2.....	2,139	1,898	1,540	1,007	577
24 years.....	1931.....	1.....	1,900	1,605	1,224	733	293
23 years.....	1932.....	0.....	1,673	1,097	645	322	129
1934							
69 years and over.....	Prior to 1889.....	46 and over.....	\$7,360	\$5,182	\$3,138	\$1,470	\$787
61-68 years.....	1889-96.....	38-45.....	8,280	5,391	3,497	1,800	770
53-60 years.....	1897-1904.....	30-37.....	7,720	5,264	3,502	2,165	1,157
45-52 years.....	1905-12.....	22-29.....	7,226	4,907	3,380	2,364	1,441
41-44 years.....	1913-16.....	18-21.....	6,204	4,441	3,211	2,256	1,491
37-40 years.....	1917-20.....	14-17.....	5,336	3,953	2,977	2,173	1,463
33-36 years.....	1921-24.....	10-13.....	4,259	3,334	2,569	1,958	1,358
31-32 years.....	1925-26.....	8-9.....	3,496	2,840	2,294	1,817	1,276
29-30 years.....	1927-28.....	6-7.....	3,004	2,467	2,023	1,568	1,061
28 years.....	1929.....	5.....	2,567	2,162	1,858	1,431	998
27 years.....	1930.....	4.....	2,318	1,987	1,666	1,256	865
26 years.....	1931.....	3.....	2,100	1,816	1,441	1,067	631
25 years.....	1932.....	2.....	1,952	1,581	1,275	945	495
24 years.....	1933.....	1.....	1,801	1,454	1,139	813	333
23 years.....	1934.....	0.....	1,310	927	598	299	120

This table makes it plain that the engineers' earnings advanced with age. In 1929, the income level of half of the engineers who had graduated in 1927 or 1928, or were from 24 to 25 years of age, exceeded \$2,098, whereas that of half of the engineers in the age group 56-63 exceeded \$4,968. Similarly, in 1932 and 1934, there was a continuous advance. But apparently age 60 represented a turning point in the average earnings of professional engineers. Furthermore, the increase in earnings with age comprised three distinct phases: Initial periods of exceptionally rapid rise which contain

the maximum average yearly increase, followed by two others in which the rates of increase were progressively slower up to the respective maxima of the five income groups or levels. The age spans of these phases differed with the income level. Thus, for the middle and two lower levels of income in 1929, the maximum yearly increase of \$450 was reached at the age of 25. On the other hand, the initial periods of rapid rise for the upper 25 and 10 percent levels were not reached until the ages of 27 and 34 respectively. The subsequent periods of increase for the upper 10 percent embraced the age spans of 34 to 44, and 44 to 60, whereas those for the next highest income level extended from 27 to 38, and 38 to 60 years of age. The three remaining income levels increased at practically the same rate between 25 and 34 years. But while the age span for the third phase of increase was from 34 to 52 for the middle level, it extended only from 34 to 44 in the case of the two lower levels of income.

There was also an increased spread of earnings with advancing age. Even in the early ages there was a fairly considerable range. Thus, in 1929, among those who graduated in 1927 or 1928, the lowest quarter earned less than \$1,822, whereas the earnings of the highest quarter were about one-third higher than this amount, or \$2,497 per annum. It is also true that the highest 10 percent of these ages earned at least twice as much as the lowest 10 percent. But among engineers who were about 52 in 1929, the highest-paid quarter earned at least twice as much as the lowest-paid quarter, and the highest 10 percent earned more than four times as much as the lowest 10 percent. Similar relationships existed in 1932 and 1934, although the range of increases was due in large part to the influence of unemployment on the earnings in the lower levels of income.

The spread in earnings was accentuated beyond the age of 38. At that point, the income curve of the upper 10 percent diverged upward and continued thus to the age of 60. On the other hand, the remaining curves ran consistently parallel up to their respective maxima. For example, at the ages of 25, 44, 52, and 60 the incomes of the upper 25 percent differed from the median by 19, 41, 45, and 51 percent, while the order of differences for the lower 25 percent was 13, 26, 29, and 32 percent. By contrast, the corresponding incomes of the upper 10 percent at these ages were greater than the median by 45, 116, 138, and 157 percent. Clearly, beyond the age of 44, the earned annual incomes reported in 1929 by the upper 10 percent of all engineers differed very greatly from those in the other income levels, and this advantage in earning capacity was maintained in 1932 and 1934 also.

The earnings of engineers in the lower income brackets ceased to increase at a relatively early age. It is only approximately correct to assume that ability and income are in direct proportion. By and

CHART I

EARNED ANNUAL INCOME OF ENGINEERS ACCORDING TO AGE, 1929

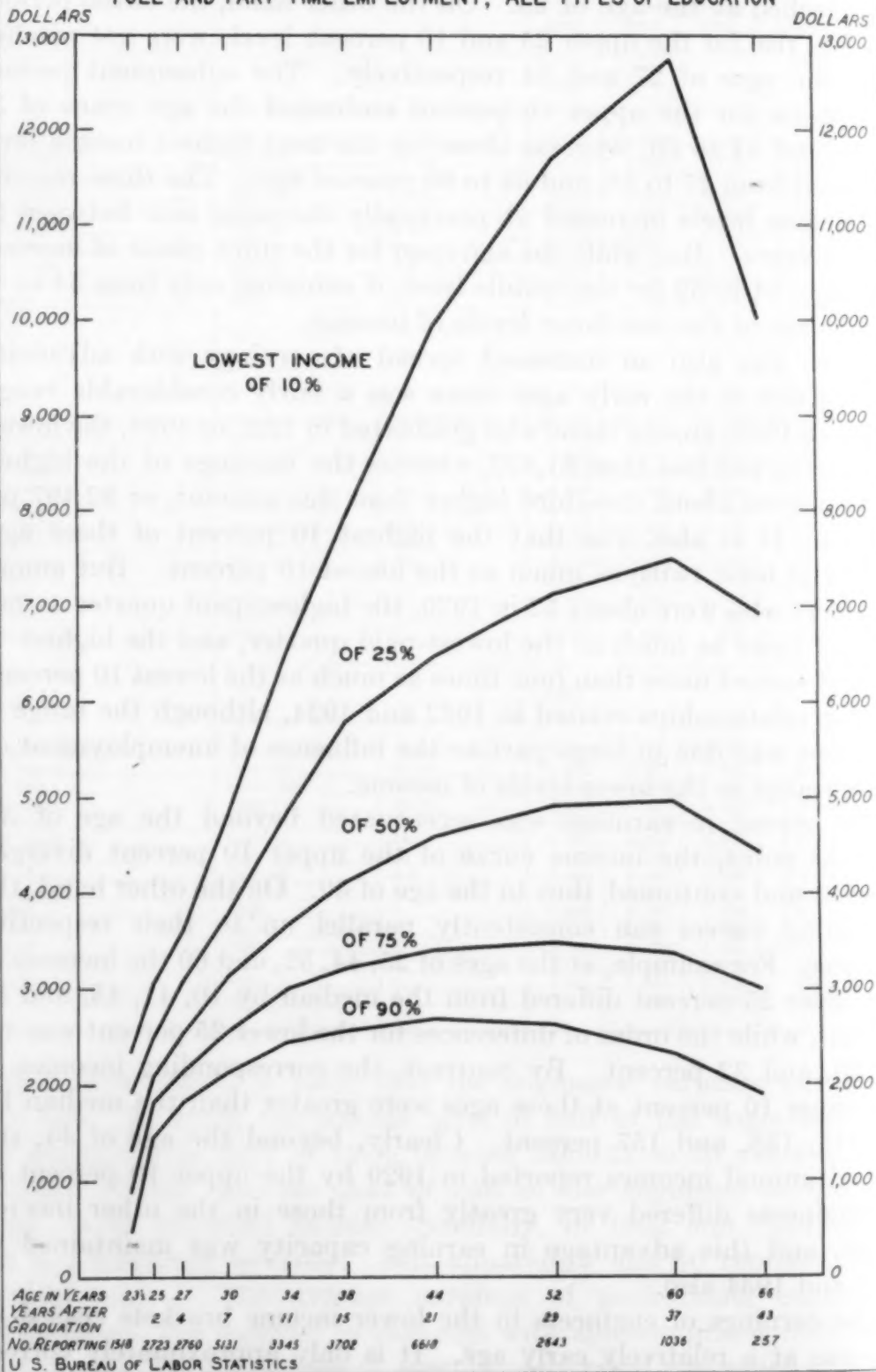
INCOME FROM ENGINEERING AND NONENGINEERING SERVICES, INCLUDING
FULL AND PART TIME EMPLOYMENT, ALL TYPES OF EDUCATION

CHART 2

MEDIANS OF EARNED ANNUAL INCOME ACCORDING TO AGE 1929, 1932 AND 1934

INCOME FROM ENGINEERING AND NONENGINEERING SERVICES INCLUDING
FULL AND PART TIME EMPLOYMENT, ALL TYPES OF EDUCATION

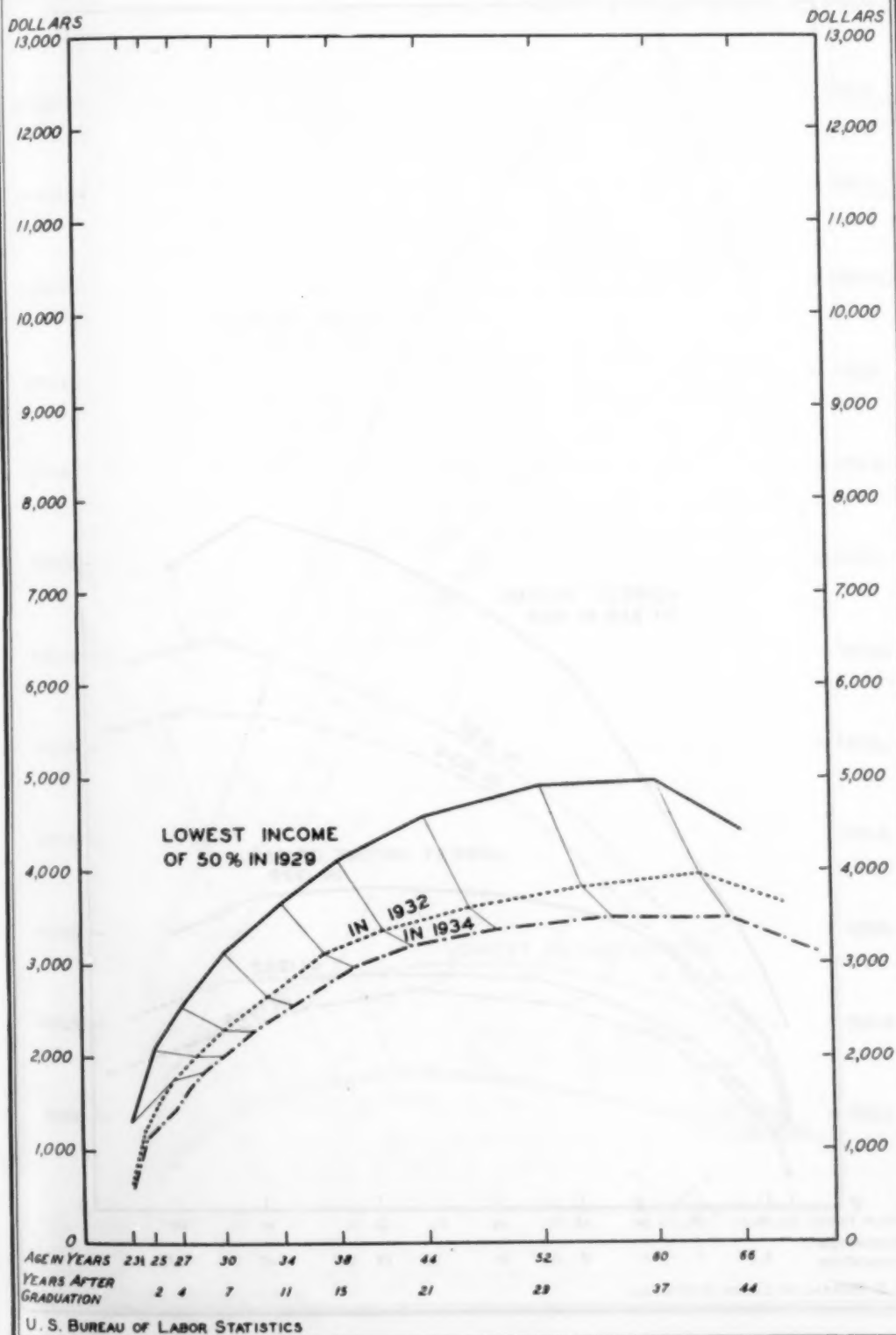


CHART 3

UPPER AND LOWER QUARTILES OF EARNED ANNUAL INCOME ACCORDING TO AGE 1929, 1932 AND 1934

INCOME FROM ENGINEERING AND NONENGINEERING SERVICES INCLUDING
FULL AND PART TIME EMPLOYMENT, ALL TYPES OF EDUCATION

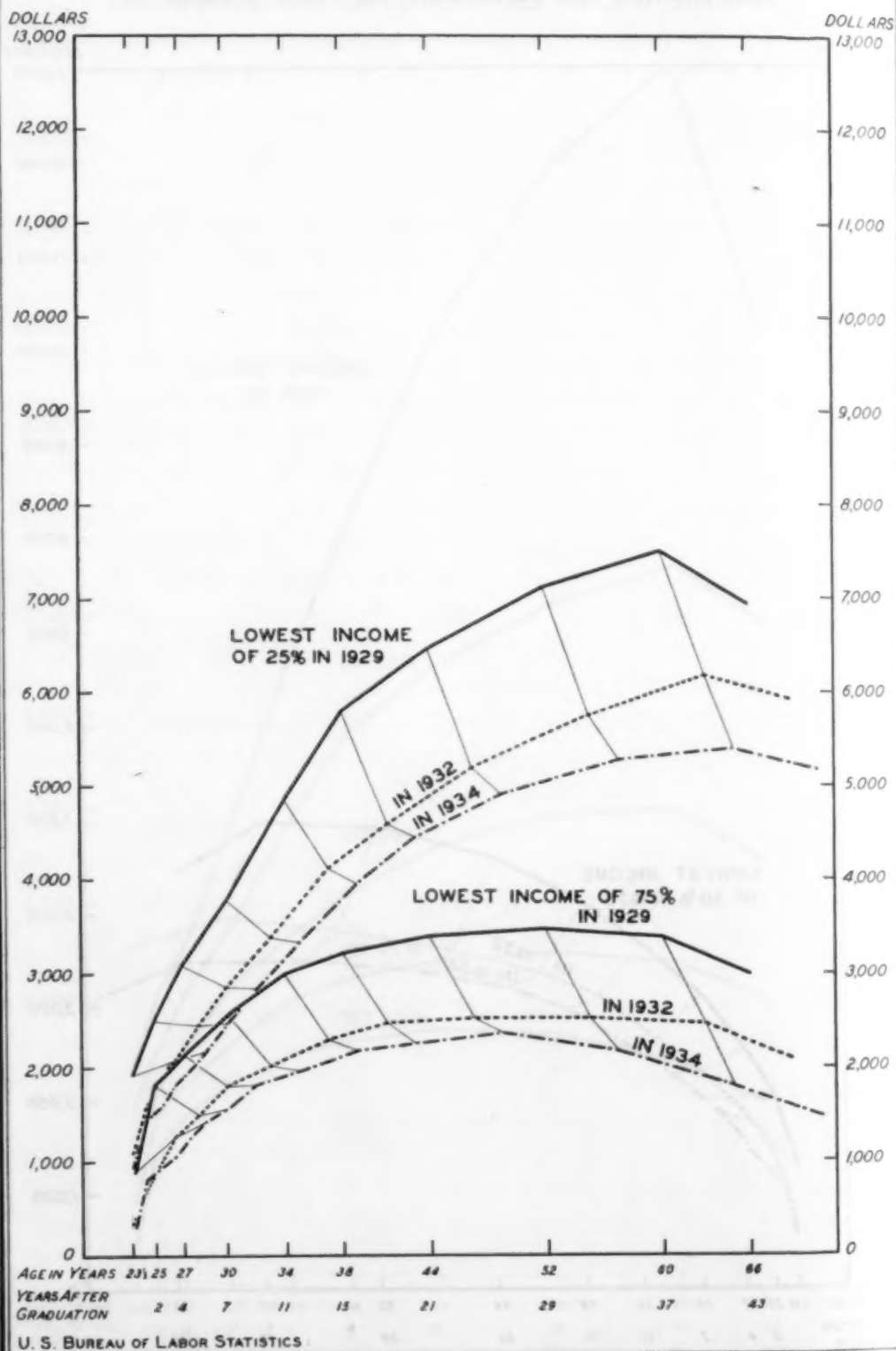
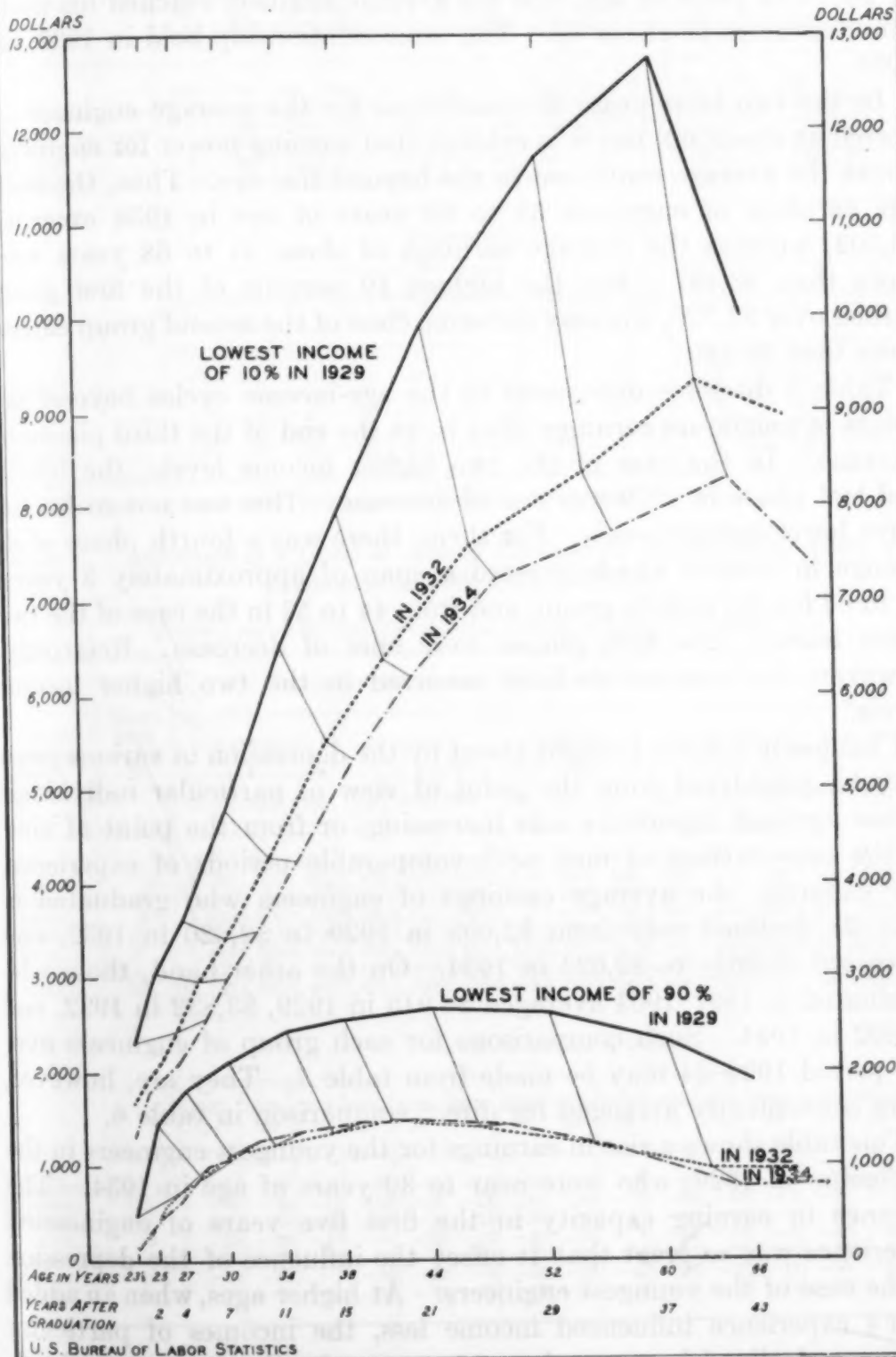


CHART 4

UPPER AND LOWER DECILES OF EARNED ANNUAL INCOME ACCORDING TO AGE 1929, 1932 AND 1934

INCOME FROM ENGINEERING AND NONENGINEERING SERVICES INCLUDING
FULL AND PART TIME EMPLOYMENT, ALL TYPES OF EDUCATION



large, however, it is perhaps safe to assume that the engineers at any age in the lowest 10 percent income group are less able than the average at that age; and that the highest 10 percent are substantially more able than the average. The Bureau's data reveal that the maximum earnings of the lowest 10 and 25 percent were reached in 1929 at about 44 years of age, and the average engineer reached his maximum earnings at about 52. The same relationship held in 1932 and 1934.

In the two later years the maximum for the average engineer occurred at about 60, but it is evident that earning power for engineers above the average continued to rise beyond this age. Thus, the average earnings of engineers 53 to 60 years of age in 1934 exceeded \$3,502, whereas the average earnings of those 61 to 68 years were more than \$3,497. But the highest 10 percent of the first group earned over \$7,720, whereas the same class of the second group earned more than \$8,280.

Table 5 discloses differences in the age-income cycles beyond the points of maximum earnings, that is, at the end of the third phases of increase. In the case of the two higher income levels, the fourth and last phase in 1929 was one of decrease. This was not so for the three lower income levels. For them, there was a fourth phase of no change in income which covered a span of approximately 8 years: 52 to 60 for the middle group, and from 44 to 52 in the case of the two lower levels. The fifth phases were ones of decrease. Relatively, however, the steepest declines occurred in the two higher income levels.

Changes in income brought about by the depression in various years may be considered from the point of view of particular individuals whose age and experience was increasing, or from the point of view of the expectations of men with comparable periods of experience. For example, the average earnings of engineers who graduated in 1927-28 declined only from \$2,098 in 1929 to \$2,020 in 1932, and increased slightly to \$2,023 in 1934. On the other hand, those who graduated in 1897-1904 averaged \$4,918 in 1929, \$3,832 in 1932, and \$3,502 in 1934. Such comparisons for each group of engineers over the period 1929-34 may be made from table 5. They are, however, more conveniently arranged for direct comparison in table 6.

This table shows a rise in earnings for the youngest engineers in the profession in 1929, who were near to 30 years of age in 1934. The advance in earning capacity in the first five years of engineering experience was so great that it offset the influence of the depression in the case of the youngest engineers. At higher ages, when an added year's experience influenced income less, the incomes of particular engineers declined by as much as 30 percent for the average graduate of the classes of 1889-96.

TABLE 6.—Comparison of 5 Levels of Annual Earnings for 5 Age Groups of Older¹ Engineers Reporting in 1929, 1932, and 1934

[Without regard to employment status reported or type of education]

Percent at specified income level	Engineers, with annual earnings of more than specified amount, whose age was—														
	60 in 1929	63 in 1932	65 in 1934	38 in 1929	41 in 1932	43 in 1934	30 in 1929	33 in 1932	35 in 1934	25 in 1929	28 in 1932	30 in 1934	23½ in 1929	26½ in 1932	28½ in 1934
	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
10 percent.....	12,749	9,318	8,280	7,936	6,395	6,204	4,797	4,287	4,259	3,049	2,970	3,004	2,330	2,451	2,567
20 percent.....	7,493	6,167	5,391	5,802	4,592	4,441	3,786	3,386	3,334	2,497	2,452	2,467	1,922	2,075	2,162
50 percent.....	4,968	3,959	3,497	4,121	3,385	3,211	3,145	2,677	2,569	2,098	2,020	2,023	1,313	1,772	1,858
75 percent.....	3,378	2,462	1,800	3,210	2,475	2,256	2,567	2,025	1,958	1,822	1,504	1,568	882	1,271	1,431
90 percent.....	2,328	964	770	2,563	1,478	1,491	2,130	1,229	1,358	1,462	876	1,061	478	735	998
Percent of increase or decrease															
	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34
10 percent.....	-35	-27	-11	-22	-19	-3	-11	-11	-1	-1	-3	+1	+10	+5	+5
25 percent.....	-28	-18	-13	-23	-21	-3	-12	-11	-2	-1	-2	+1	+12	+8	+4
50 percent.....	-30	-20	-12	-22	-18	-5	-18	-15	-4	-4	-4	0	+42	+35	+5
75 percent.....	-47	-27	-27	-30	-23	-9	-24	-21	-3	-14	-17	+4	+62	+44	+13
90 percent.....	-67	-59	-20	-42	-42	+1	-36	-42	+10	-27	-40	+21	+109	+54	+36

¹ Includes those engineers who were professionally active prior to 1930.

TABLE 7.—Comparison of 5 Levels of Annual Earnings for Corresponding Years After Graduation in 1929, 1932, and 1934

[Without regard to employment status reported or type of education]

Age of engineers	Years after graduation	Proportion with annual earnings of more than specified amount														
		10 percent			25 percent			50 percent			75 percent			90 percent		
		1929	1932	1934	1929	1932	1934	1929	1932	1934	1929	1932	1934	1929	1932	1934
		Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
23½ years....	½	2,330	1,673	1,310	1,922	1,097	927	1,313	645	598	882	322	299	478	129	120
25 years....	2	3,049	2,150	1,880	2,497	1,750	1,500	2,098	1,399	1,190	1,822	840	860	1,462	420	410
28 years....	5	3,980	2,970	2,410	3,300	2,452	2,080	2,710	2,020	1,750	2,275	1,504	1,340	1,925	876	940
33 years....	10	6,000	4,287	3,700	4,560	3,386	2,990	3,500	2,677	2,380	2,890	2,025	1,850	2,375	1,229	1,299
43 years....	20	9,450	6,680	6,204	6,350	4,750	4,441	4,450	3,420	3,211	3,380	2,490	2,256	2,650	1,460	1,491
53 years....	30	11,700	8,000	7,450	7,190	5,580	5,050	4,900	3,780	3,420	3,430	2,520	2,240	2,590	1,285	1,286
60 years....	37	12,749	8,900	7,900	7,493	5,960	5,250	4,968	3,900	3,500	3,378	2,490	2,010	2,328	1,050	980
Percent of increase or decrease																
		1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34
23½ years....	½	-44	-28	-22	-52	-43	-15	-54	-51	-7	-66	-63	-1	-75	-73	-1
25 years....	2	-38	-29	-13	-40	-30	-14	-43	-33	-13	-53	-54	+2	-72	-71	-2
28 years....	5	-39	-25	-19	-37	-26	-15	-35	-25	-13	-41	-34	-11	-51	-54	+7
33 years....	10	-38	-29	-14	-34	-26	-12	-32	-24	-11	-36	-30	-9	-45	-48	+6
43 years....	20	-34	-29	-7	-30	-25	-7	-28	-23	-6	-33	-26	-9	-44	-45	+2
53 years....	30	-36	-32	-7	-30	-22	-9	-30	-23	-10	-35	-27	-11	-50	-50	0
60 years....	37	-38	-30	-11	-30	-20	-12	-30	-21	-10	-40	-26	-19	-58	-55	-7

In order to trace the influence of the depression on professional opportunity and on the normal expectations of members of the profession, table 7 compares the earnings for identical ages in each of the 3 years.⁹

For each level of experience, incomes declined from 1929 to 1934, and two-thirds to three-quarters of this decline occurred from 1929 to 1932. Over the entire period the average income of those who had been out of college for 2 years declined 43 percent. Those who had been out 5 years had, on the average, 35 percent less income in 1934 than the corresponding group in 1929. For older engineers, the decline approximated 30 percent, being slightly more than this for those with 10 years' experience, and slightly less for those with 20 years' experience.

The most significant differences brought about by the depression were in the spread of incomes at various ages. In all cases, primarily because of the influence of unemployment, annual income for the lowest 25 percent and the lowest 10 percent declined more than the average income at a given age. Thus, 2 years after graduation, 10 percent of the engineers earned less than \$1,462 in 1929 as compared with a corresponding group earning less than \$410 in 1934. This was a decline of 72 percent as compared with a 43 percent decline for the average at this age. Similarly, the average for engineers 30 years after graduation declined 30 percent from 1929 to 1934, while the level below which the earnings of 10 percent of such engineers were found fell by 50 percent.

There was comparatively little difference for the various ages in the decline of the median income or in the decline of the level of income above which only 25 percent of the engineers of corresponding ages were found. The highest level of income (that achieved by only 10 percent at each age) declined more than the average in the case of all groups of engineers with 5 years' or more experience. Thus this select group among engineers 60 years of age lost 38 percent from 1929 to 1934, whereas the average decline at that age was 30 percent.

⁹ The figures are not derived from direct tabulations which were made on the basis of the same combinations of years of birth or graduation in each of the 3 years, but the movements of earnings proved to be sufficiently regular to justify reading the values for particular ages from the chart.

Annual Income and Education

The foregoing analysis of annual incomes reported by professional engineers for 1929, 1932, and 1934 took no account of differences in educational background. In 1929, some 22,386, or 86 percent, of the 24,837 older graduates in engineering courses in the sample reported income and 7,646, or 90 percent, of the 8,440 older "other" engineers who were in the profession in 1929 reported. The five income levels for these two groups are shown in table 8.

TABLE 8.—Comparison of 5 Levels of Earned Annual Income for Older,¹ Graduate² and "Other"³ Engineers Reporting in Each Professional Class, 1929, 1932, and 1934

[Without regard to employment status reported]

Percent of professional class ⁴ at specified income level	Annual earnings of more than specified amount						Percent income of "other" engineers formed of that of graduate engineers—		
	Graduate engineers ²			"Other" engineers ³					
	1929	1932	1934	1929	1932	1934	1929	1932	1934
10 percent:									
Mining and metallurgical.....	\$10, 015	\$7, 413	\$7, 530	\$8, 940	\$6, 370	\$6, 263	89	86	83
Chemical and ceramic.....	9, 173	7, 432	7, 414	8, 100	6, 435	6, 795	88	87	92
Mechanical and industrial.....	8, 715	6, 481	6, 269	8, 161	6, 273	5, 907	94	97	96
Electrical.....	7, 301	6, 263	6, 084	6, 654	5, 943	5, 670	91	95	93
Civil, agricultural, and architectural..	6, 853	5, 478	5, 133	5, 745	4, 470	4, 222	84	82	82
25 percent:									
Mining and metallurgical.....	6, 349	4, 973	4, 833	6, 025	4, 640	4, 587	95	93	95
Chemical and ceramic.....	6, 111	5, 116	4, 976	5, 210	4, 540	4, 335	85	89	87
Mechanical and industrial.....	5, 603	4, 414	4, 262	5, 536	4, 269	3, 972	99	97	93
Electrical.....	4, 886	4, 175	4, 062	4, 497	3, 762	3, 654	92	90	90
Civil, agricultural, and architectural..	4, 732	3, 923	3, 671	4, 036	3, 349	3, 163	85	85	86
50 percent:									
Mining and metallurgical.....	4, 053	3, 299	3, 227	3, 762	3, 082	3, 072	93	93	95
Chemical and ceramic.....	3, 839	3, 368	3, 308	3, 525	3, 050	2, 857	92	91	86
Mechanical and industrial.....	3, 663	3, 025	2, 848	3, 777	2, 929	2, 645	103	97	93
Civil, agricultural, and architectural..	3, 375	2, 834	2, 636	3, 099	2, 530	2, 362	92	89	90
Electrical.....	3, 296	2, 863	2, 821	3, 213	2, 627	2, 517	97	92	89
75 percent:									
Mining and metallurgical.....	2, 841	2, 013	2, 029	2, 829	2, 013	1, 947	99	100	96
Mechanical and industrial.....	2, 556	1, 981	1, 952	2, 902	1, 930	1, 837	114	97	94
Civil, agricultural, and architectural..	2, 541	2, 009	1, 956	2, 429	1, 860	1, 747	96	93	89
Chemical and ceramic.....	2, 538	2, 178	2, 195	2, 540	1, 885	1, 834	100	87	84
Electrical.....	2, 317	1, 997	2, 003	2, 400	1, 883	1, 792	104	94	89
90 percent:									
Mining and metallurgical.....	1, 977	1, 052	1, 279	2, 030	1, 210	1, 283	103	115	100
Civil, agricultural, and architectural..	1, 935	1, 136	1, 361	1, 910	1, 028	1, 152	99	90	85
Mechanical and industrial.....	1, 888	1, 212	1, 245	2, 170	1, 040	1, 169	115	86	94
Chemical and ceramic.....	1, 657	1, 443	1, 458	1, 820	899	783	110	48	54
Electrical.....	1, 609	1, 311	1, 308	1, 860	1, 185	1, 088	116	90	83

¹ Includes all engineers who were professionally active prior to 1930.

² Graduate engineers embrace all postgraduates, nonengineering graduates, and first degree engineering graduates.

³ "Other" engineers embrace all engineers with college course incomplete, noncollegiate technical school course, and secondary school education.

⁴ Arranged in ascension of graduate earned annual income for 1929.

Consideration of the ratios derived from the 1929 earnings reported by the "other" and graduate engineers clearly indicates that those with a formal engineering education had higher incomes. Thus, in the highest 10 and 25 percent income groups, the earnings of the graduates in each professional class exceeded those of the "other" engineers. It will, however, be noted that there were wide variations in the ratios in the earnings of the two groups, indicating that the differentials in earnings do not accrue in equal measure for all five professional classes. In the upper 25 percent level, the order of yearly differences in favor of the graduates was \$901, \$696, \$389, \$324, and \$67, the three smallest of these being in the electrical, mining and metallurgical, and mechanical and industrial classes. In the highest income level, differences of \$647 and \$554 per year were reported by the graduate electrical and mechanical and industrial engineers; in the three remaining professional classes none of the graduate groups reported differentials of less than \$1,000 per year. In general, from 1929 to 1934, the earnings of the upper 25 percent of the older graduates and of the "other" engineers declined by similar amounts.

The advantage enjoyed by engineers with college degrees is less marked at the lower levels. The average income of mechanical engineers in the profession in 1929 reporting income for 1929 was actually higher for noncollege graduates than for graduates. This was the only professional class of which this was true for the average, but, in general, the lowest 25 percent and the lowest 10 percent among the "other" engineers had higher incomes than among the graduates. But even at these levels, it will be seen that an advantage accrued over the period 1929 to 1934 to the college graduates. The income of the lowest 25 percent of those graduating prior to 1929 declined less than the income of the lowest 25 percent of the corresponding group of "other" engineers and by 1934, college graduates had the higher incomes even at this level.

The apparent advantage enjoyed in 1929 by the "other" engineers at the lower levels of income may best be explained in conjunction with the data in tables 9 and 10. The data for the median values¹⁰ only of earned annual income of all engineers classified by age in the three years, 1929, 1932, and 1934 are presented in table 9.¹¹

¹⁰ I. e., the middle value of earned annual income—50 percent earning more and 50 percent earning less than the figure shown.

¹¹ Insufficient data were furnished for the two lower

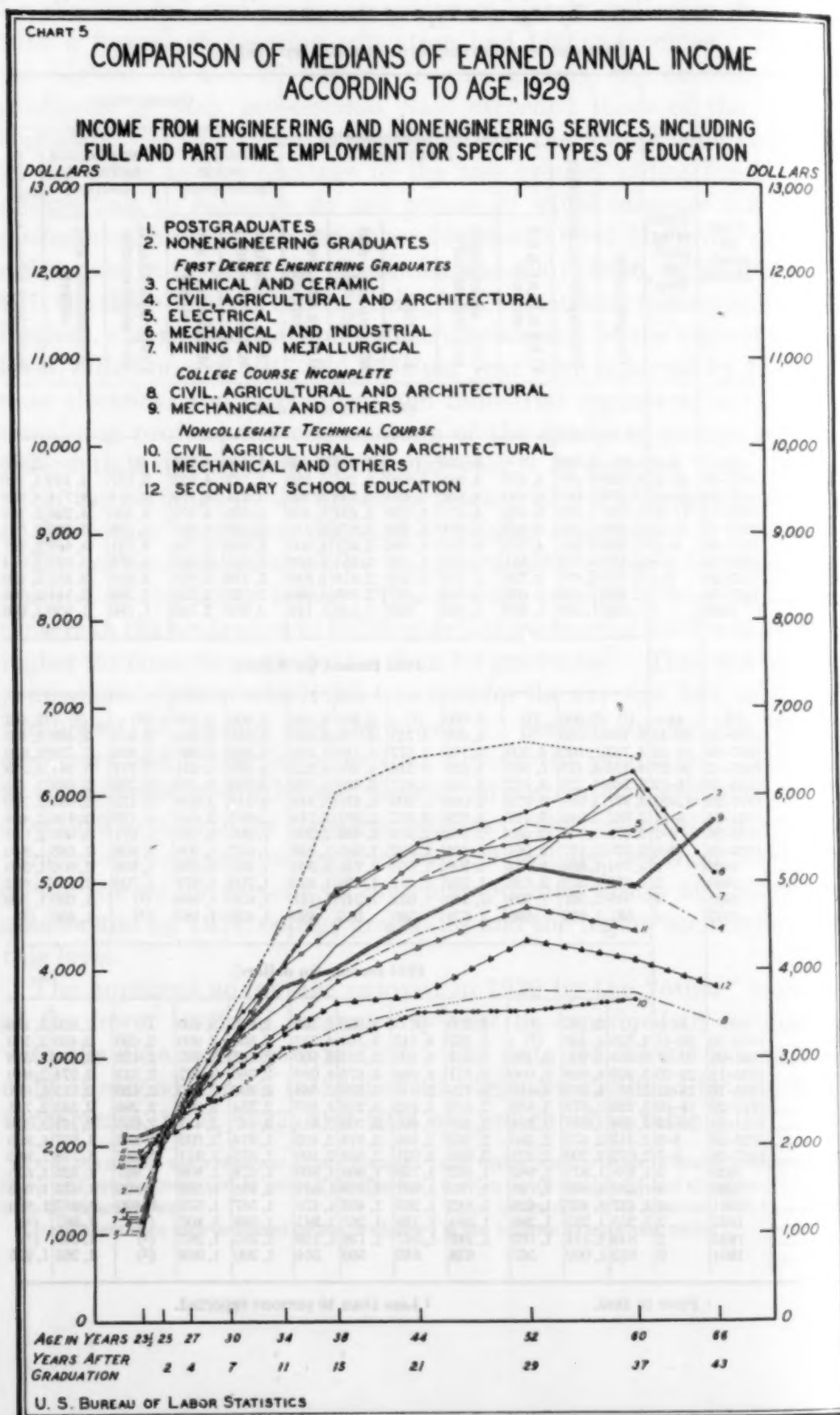
and higher income levels to enable a complete comparison for all age groups and all types of education. These incomplete data, however, will be published in the bulletin as appendix tables.

TABLE 9.—Median Annual Earnings in 1929, 1932, and 1934, for all Engineers Reporting by Age and Type of Education

[Without regard to employment status reported]

Age	Year of graduation	Years after graduation	Postgraduates	Nonengineering graduates	First-degree engineering graduates						Others with—			
					Chemical and ceramic	Civil, agricultural, and architectural	Electrical	Mechanical and industrial	Mining and metallurgical	College course incomplete		Noncollegiate technical course		Secondary school education
										Civil, agricultural, and architectural	Mechanical and others	Civil, agricultural, and architectural	Mechanical and others	
1929 income (in dollars)														
64 and over.	(1)	41+	(2)	6,000	(1)	4,460	(2)	5,100	4,800	3,400	5,700	(2)	(2)	3,800
56-63.	1889-96	33-40	6,030	5,500	6,450	4,981	5,580	6,255	6,180	3,733	4,933	3,657	4,440	4,120
48-55.	1897-04	25-32	5,320	5,663	6,600	4,804	5,460	5,793	5,200	3,774	5,179	3,514	4,714	4,333
40-47.	1905-12	17-24	5,000	5,000	6,429	4,411	5,239	5,434	5,400	3,565	4,579	3,500	4,246	3,708
36-39.	1913-16	13-16	4,286	4,933	6,021	3,964	4,480	4,878	4,825	3,328	4,031	3,168	3,889	3,625
32-35.	1917-20	9-12	3,608	4,086	4,523	3,616	4,048	4,057	4,600	3,036	3,793	3,121	3,448	3,267
28-31.	1921-24	5-8	3,164	3,072	3,544	3,122	3,190	3,354	3,306	2,614	3,200	2,574	2,925	2,814
26-27.	1925-26	3-4	2,565	2,675	2,729	2,579	2,505	2,616	2,840	2,410	2,468	2,400	2,482	2,250
24-25.	1927-28	1-2	2,008	1,978	2,007	2,150	1,977	2,099	2,086	2,127	2,232	2,200	2,144	2,100
23.	1929	0	1,040	1,500	1,200	1,256	996	1,146	1,175	2,062	2,129	1,780	1,950	1,900
1932 income (in dollars)														
67 and over.	(1)	44+	(2)	3,000	(1)	3,600	(2)	5,200	1,100	2,600	4,600	(2)	(2)	3,467
59-66.	1889-96	36-43	5,160	4,600	(2)	4,090	4,733	4,700	5,000	2,950	3,600	2,933	3,400	3,433
51-58.	1897-04	28-35	4,757	5,000	5,200	3,761	4,677	4,189	3,940	2,969	3,688	2,846	3,550	3,650
43-50.	1905-12	20-27	4,155	4,475	5,320	3,533	4,214	4,070	4,222	3,038	3,631	2,777	3,241	3,178
39-42.	1913-16	16-19	3,745	4,222	4,657	3,318	3,877	3,800	3,700	2,702	3,162	2,709	2,968	3,173
35-38.	1917-20	12-15	3,377	3,600	3,773	3,048	3,509	3,470	3,444	2,518	3,029	2,475	2,682	2,720
31-34.	1921-24	8-11	2,882	2,945	3,167	2,628	2,807	2,861	2,744	2,406	2,563	2,173	2,310	2,488
29-30.	1925-26	6-7	2,472	2,655	2,580	2,343	2,309	2,403	2,200	2,090	2,105	1,971	2,000	2,057
27-28.	1927-28	4-5	2,029	2,167	2,064	2,124	1,992	1,985	1,940	1,932	1,906	1,836	1,686	1,840
26.	1929	3	1,794	1,800	1,773	1,896	1,660	1,716	1,560	1,657	1,638	1,900	1,600	1,350
25.	1930	2	1,378	1,575	1,628	1,709	1,451	1,495	1,492	1,709	1,373	1,700	1,450	1,633
24.	1931	1	948	1,367	1,208	1,349	1,032	1,247	1,147	1,620	1,390	(2)	1,600	1,700
23.	1932	0	687	1,800	606	629	586	645	480	1,433	1,183	(2)	1,400	(2)
1934 income (in dollars)														
69 and over.	(1)	46+	(2)	3,100	(2)	3,200	(2)	3,933	1,200	2,000	3,400	(2)	2,000	3,100
61-68.	1889-96	38-45	4,333	4,400	(2)	3,567	4,143	4,100	4,333	2,800	2,900	2,600	2,460	3,133
53-60.	1897-04	30-37	4,488	4,400	5,100	3,337	4,400	3,731	3,900	2,787	3,493	2,429	3,364	3,508
45-52.	1905-12	22-29	3,923	4,088	5,000	3,311	4,089	3,875	4,086	2,780	3,497	2,533	2,974	2,940
41-44.	1913-16	18-21	3,517	4,467	4,111	3,129	3,917	3,538	3,588	2,496	2,990	2,420	2,713	3,031
37-40.	1917-20	14-19	3,250	3,575	3,850	2,826	3,393	3,278	3,567	2,354	2,890	2,286	2,543	2,711
33-36.	1921-24	10-13	2,864	2,857	3,244	2,516	2,801	2,704	2,811	2,147	2,432	2,036	2,161	2,356
31-32.	1925-26	8-9	2,513	2,475	2,586	2,263	2,364	2,378	2,463	1,974	2,093	1,863	1,957	1,900
29-30.	1927-28	6-7	2,072	2,200	2,225	2,069	2,021	2,058	2,100	1,875	1,911	1,567	1,738	1,860
28.	1929	5	1,888	1,871	1,982	1,892	1,759	1,908	1,809	1,678	1,808	1,867	1,525	1,575
27.	1930	4	1,563	1,800	1,795	1,762	1,527	1,719	1,542	1,518	1,500	1,800	1,433	1,660
26.	1931	3	1,437	1,457	1,426	1,545	1,263	1,433	1,479	1,567	1,633	1,400	1,467	1,800
25.	1932	2	1,255	1,233	1,286	1,384	1,138	1,261	1,241	1,388	1,400	(2)	1,367	(2)
24.	1933	1	840	1,314	1,162	1,249	1,047	1,126	1,159	1,283	1,267	(2)	1,600	(2)
23.	1934	0	612	1,000	567	638	540	560	504	1,200	1,089	(2)	1,263	1,325

¹ Prior to 1889.² Less than 10 persons reported.



The first observation to be made has regard to the fact that the "other" engineers, at a very early age, lose the advantage in earning capacity arising from practical experience gained while the college graduate is in school. This loss of advantage is best exemplified by considering the ranking order of the 12 groups of engineers at corresponding years after graduation (table 10).

TABLE 10.—*Rank of Engineers of Specified Education According to Median Annual Earnings in 1929 and 1934, for Corresponding Years after Graduation*

[Without regard to employment status reported]

Type of education	Years after graduation											
	2	5	10	20	30	37	2	5	10	20	30	37
	Rank in 1929						Annual earnings in 1929					
College course incomplete: Mechanical and others ¹	1	8	6	7	7	8	\$2,232	\$2,650	\$3,580	\$4,425	\$5,100	\$4,933
Noncollegiate technical course: Civil, agricultural, and architectural	2	11	11	12	12	12	2,200	2,450	2,950	3,425	3,550	3,657
First-degree engineering graduates: Civil, agricultural, and architectural	3	5	7	8	8	7	2,150	2,750	3,490	4,300	4,800	4,981
Noncollegiate technical course: Mechanical and others ¹	4	9	9	9	9	9	2,144	2,600	3,300	4,190	4,650	4,440
College course incomplete: Civil, agricultural, and architectural	5	10	12	11	11	11	2,127	2,475	2,900	3,500	3,750	3,733
Secondary school education	6	12	10	10	10	10	2,100	2,430	3,150	3,700	4,275	4,120
First-degree engineering graduates: Mechanical and industrial	7	3	3	2	2	2	2,099	2,825	3,875	5,350	5,800	6,255
Mining and metallurgical	8	2	2	3	6	3	2,086	2,975	4,200	5,300	5,350	6,180
Postgraduates	9	6	8	6	5	4	2,008	2,750	3,475	4,850	5,375	6,030
First-degree engineering graduates: Chemical and ceramic	10	1	1	1	1	1	2,007	3,000	4,250	6,350	6,600	6,450
Nonengineering graduates	11	4	5	5	3	6	1,978	2,800	3,800	4,990	5,600	5,500
First-degree engineering graduates: Electrical	12	7	4	4	4	5	1,977	2,725	3,800	5,075	5,450	5,580
	Rank in 1934						Annual earnings in 1934					
	2	5	10	20	30	37	2	5	10	20	30	37
Secondary school education	1	9	9	8	9	8	\$1,550	\$1,625	\$2,025	\$3,031	\$3,200	\$3,350
Noncollegiate technical course: Mechanical and others ¹	2	12	10	10	10	10	1,475	1,475	2,010	2,713	3,150	2,980
College course incomplete: Mechanical and others ¹	3	10	8	9	7	9	1,350	1,600	2,200	2,990	3,490	3,200
Noncollegiate technical course: Civil, agricultural, and architectural	4	2	12	12	12	12	(²)	1,830	1,900	2,420	2,490	2,490
First-degree engineering graduates: Civil, agricultural, and architectural	5	5	7	7	8	7	1,325	1,800	2,350	3,129	3,300	3,400
College course incomplete: Civil, agricultural, and architectural	6	11	11	11	11	11	1,300	1,600	2,000	2,496	2,780	2,790
Nonengineering graduates	7	3	3	1	2	3	1,275	1,825	2,600	4,467	4,250	4,400
First-degree engineering graduates: Chemical and ceramic	8	1	1	2	1	1	1,250	1,875	2,750	4,111	5,050	(²)
Mining and metallurgical	9	7	4	4	5	5	1,200	1,700	2,550	3,588	3,980	4,050
Mechanical and industrial	10	4	6	5	6	6	1,180	1,825	2,490	3,538	3,780	3,880
Electrical	11	8	5	3	3	4	1,080	1,650	2,500	3,917	4,250	4,325
Postgraduates	12	6	2	6	4	2	940	1,750	2,610	3,517	4,175	4,425

¹ Includes chemical and ceramic, electrical, industrial, and mining and metallurgical engineers.

² Less than 10 engineers reported.

At the end of 2 years after graduation¹² in 1929, the "other" engineers held ranks 1, 2, 4, 5, and 6, the first-degree civil graduates were third, and the remaining graduate groups occupied positions 7

¹² The incomes reported just after graduation are not compared. These are invalidated by the fact that, while the graduates could have reported incomes for 6 months only, it was possible for the "other" engineers to have reported an income for a full year or more.

to 12, inclusive. Five years after graduation, however, there was a complete reversal of this situation, which placed all graduates ahead of the "other" engineers.

Relatively, the greatest shifts in position occurred between the second and fifth years after graduation. Secondary-school engineers dropped from sixth to twelfth place. The noncollegiate civil engineers declined from second to eleventh place, while the civil engineers whose college course was incomplete declined from fifth to tenth place. Positions 8 and 9, respectively, were occupied by the mechanical engineers whose college course was incomplete and those who were graduates of noncollegiate technical schools; 2 years after graduation they had held first and fourth places. Among the engineering graduates, the greatest shift in position occurred among the first-degree chemical and ceramic engineers, who moved from tenth to first place at 5 years after graduation, and maintained that position throughout the 1929 age cycle. It will also be noted that the 1929 earnings reported by the first-degree civil engineers were greater at 5 years after graduation than those of both postgraduates and first-degree electrical engineers. On the other hand, the earnings of these three groups were less than those reported by first-degree mining and metallurgical, and mechanical and industrial engineers, and nonengineering graduates.

Thus, it follows that the greater decline from 1929 to 1934 in the incomes of the lower 10 and 25 percent of the "other" engineers reflects in part the greater advantage of 5 years' additional experience among the younger college graduates.

Between 5 and 10 years after graduation, there were but slight changes in relative position. At the latter period, however, all first-degree and nonengineering graduates were ahead of the postgraduate engineers. The secondary-school engineers reported earnings greater than either of the two groups of "other" civil engineers. The "other" mechanical engineers trained in noncollegiate technical schools followed ninth in order, after the postgraduates.

At 20 years after graduation, the first-degree civil engineers ranked below both the "other" mechanical engineers whose college course was incomplete and the postgraduate engineers; between 20 and 37 years after graduation, the relative standing of the several groups remained comparatively stable. It will also be noted that even in 1934 the order of the groups shows no marked departure from the situation which prevailed in 1929.

A further explanation may be given of the apparent advantage of "other" engineers in the lower income levels, as shown in table 8. There are too few cases to warrant showing text tables of income for the lowest 10 and 25 percent of the engineers classified simultaneously by professional classifications, age, and type of education. But such values have been computed for every such classification embracing

more than 100 reports and the results may be summarized. In 1929, at every age, the lowest 10 percent of the civil engineers with incomplete college courses had lower incomes than the lowest 10 percent of those with completed college courses. This continued to be true in 1934 for engineers who graduated prior to 1928, the last year with an adequate number of reports to warrant this particular comparison. For the five age groups from 28 to 47 for which comparisons can be made, the lowest 10 percent of civil engineers with noncollegiate technical school courses had lower incomes than those with incomplete college courses. These statements hold, not only for the lowest 10 percent of the civil engineers but also for the lowest 25 percent. There are not enough cases of engineers in the professional classes, other than civil engineers, to warrant a detailed analysis of nongraduates on an age basis for the separate classes. But the income of the lowest 10 and 25 percent of the nongraduates of the four classes combined is less than the corresponding level of income for graduates in any of the professional classes at almost all ages for which comparisons can be made. It seems highly probable, in the light of these facts, that part of the advantage shown by "other" engineers in table 8 is due to a higher age among the nongraduates in the groups compared.

Table 10 also shows that, although the earnings reported in 1929 by the "other" engineers at 2 years after graduation were higher than those of the graduates, the differentials were not great. For the former, the 1929 median earnings ranged from \$2,100 in the case of secondary-school engineers to \$2,232 for mechanical engineers who had not completed their college course, while the range for the latter was from \$1,977 for electrical to \$2,099 for mechanical and industrial engineers. At 5 years after graduation, when the positions were reversed, the differentials were still slight. The earnings of the graduates ranged from \$2,725 to \$3,000 per year and those of the "other" engineers from \$2,430 to \$2,650. With advancing age, however, the spreads in earnings in favor of the graduates became very marked. In the case of mechanical engineers, for instance, the difference in earnings between the first-degree engineers and those who did not complete their college course was \$175, \$295, \$925, \$700, and \$1,322 per year, and between first-degree and noncollegiate mechanical engineers it was \$225, \$575, \$1,160, \$1,150, and \$1,815 per annum. Similarly, for the civil engineers, the difference in earnings between those with first-degrees and whose college course was incomplete was \$275, \$590, \$860, \$1,050, and \$1,248 per year, while between first-degree civil and noncollegiate technical school engineers, the order was \$300, \$540, \$875, \$1,250, and \$1,324 per annum.

Even among the graduate groups there was variation in earning capacity. Thus, while the earnings of first-degree civil engineers

ranged from \$2,750 to \$4,800 per year between 5 and 30 years after graduation, the range for the first-degree chemical and ceramic engineers was from \$3,000 to \$6,600 per year. In other words, over a period of 25 years, the civil engineers' earnings increased by only \$2,050, whereas those of engineers in the chemical and ceramic field increased by \$3,600. The ranges in earnings of the remaining graduate groups fell between those reported by the civil and the chemical and ceramic engineers.

Earnings of the "other" engineers ceased to increase several years before those of the graduates. Their earnings began to decline after 55 years of age in 1929, whereas the earnings of the graduates continued to increase even at 64 years of age and over (table 9).

When consideration is given to the changes in income status between 1929 and 1934 of selected age groups of engineers in each type of education, it appears, again, that the depression bore hardest upon the older engineers.

As indicated in table 11, over the period 1929-34 the decreases in earnings of engineers who were 60 years of age in 1929 and 65 in 1934 ranged from 20 to 45 percent. The smallest range, however, occurred among the graduate engineers. This is explained by the fact that for the "other" engineers, the earnings reported at the age of 60 in 1929 were those for the period of decline, since they were less than those reported for engineers who were 52 in 1929. When, however, comparison is made of the earnings for the two age groups of engineers who were 52 and 44 respectively in 1929 and five years older in 1934, it will be noted that the decreases in their earnings over the period 1929-34 show little variation. The important thing to note is that the effect of the depression was approximately the same on both graduates and "other" engineers. On the other hand, for the two younger groups shown in table 11, the graduate engineers who were 25 in 1929, practically all showed increases in their earnings by 1934, whereas the "other" engineers showed further decreases. This situation was even more pronounced in favor of the graduate engineers who were 23½ years of age in 1929.

Throughout the whole of this analysis of differences in earnings by type of education, there have only been incidental references to the changes which occurred over the period 1929-34 and in the intervening periods, 1929-32 and 1932-34. It will be recalled, however, that the percentage decreases in the incomes for all engineers at corresponding years after graduation were practically the same. This was also the case for the 12 groups of engineers when segregated by type of education, as is evidenced by a consideration of the data shown in table 12.

TABLE 11.—Comparison of Median Annual Earnings in 1929, 1932, and 1934 of Selected Age Groups of Engineers Reporting by Type of Education
[Without regard to employment status reported]

Type of education	Engineers whose age was—														
	60 in 1929	63 in 1932	65 in 1934	52 in 1929	55 in 1932	57 in 1934	44 in 1929	47 in 1932	49 in 1934	25 in 1929	28 in 1932	30 in 1934	23½ in 1929	26½ in 1932	28½ in 1934
	Median annual earnings														
Postgraduates.....	\$6,030	\$5,160	\$4,333	\$5,320	\$4,757	\$4,488	\$5,000	\$4,155	\$3,923	\$2,008	\$2,029	\$2,072	\$1,040	\$1,794	\$1,888
Nonengineering graduates.....	5,500	4,600	4,400	5,663	5,000	4,400	5,000	4,475	4,088	1,978	2,167	2,200	1,500	1,800	1,871
First-degree engineering graduates:															
Chemical and ceramic.....	6,450	(¹)	(¹)	6,600	5,200	5,100	6,429	5,320	5,000	2,007	2,064	2,225	1,200	1,773	1,982
Civil, agricultural, and architectural.....	4,981	4,090	3,567	4,804	3,761	3,337	4,411	3,533	3,311	2,150	2,124	2,069	1,256	1,896	1,892
Electrical.....	5,580	4,733	4,143	5,460	4,677	4,400	5,239	4,214	4,069	1,977	1,992	2,021	1,096	1,660	1,759
Mechanical and industrial.....	6,255	4,700	4,100	5,793	4,189	3,731	5,434	4,070	3,875	2,099	1,985	2,058	1,146	1,716	1,908
Mining and metallurgical.....	6,180	5,000	4,333	5,200	3,940	3,900	5,400	4,222	4,086	2,089	1,940	2,100	1,175	1,560	1,809
College course incomplete:															
Civil, agricultural, and architectural.....	3,733	2,950	2,800	3,774	2,969	2,787	3,565	3,038	2,780	2,127	1,932	1,875	2,062	1,657	1,678
Mechanical and others.....	4,933	3,600	2,900	5,179	3,688	3,493	4,579	3,631	3,497	2,232	1,906	1,911	2,129	1,638	1,808
Noncollegiate technical course:															
Civil, agricultural, and architectural.....	3,657	2,933	2,600	3,514	2,846	2,429	3,500	2,777	2,533	2,200	1,836	1,567	1,780	1,900	1,867
Mechanical and others.....	4,440	3,400	2,460	4,714	3,550	3,364	4,246	3,241	2,974	2,144	1,686	1,738	1,950	1,600	1,525
Secondary school education.....	4,120	3,433	3,133	4,333	3,650	3,508	3,708	3,178	2,940	2,100	1,840	1,860	1,900	1,350	1,575
Percent of change															
Postgraduates.....	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34	1929-34	1929-32	1932-34
Nonengineering graduates.....	-28	-14	-16	-16	-11	-6	-22	-17	-6	+3	+1	+2	+82	+73	+5
First-degree engineering graduates:															
Chemical and ceramic.....	(¹)	(¹)	(¹)	(¹)	-21	-2	-22	-17	-6	+11	+3	+8	+65	+48	+12
Civil, agricultural, and architectural.....	-28	-18	-13	-31	-22	-11	-25	-20	-6	+4	-1	-3	+51	+51	0
Electrical.....	-26	-15	-12	-19	-14	-6	-22	-20	-3	+2	+1	+1	+77	+67	+6
Mechanical and industrial.....	-34	-25	-13	-36	-28	-11	-29	-25	-5	-2	-5	+4	+66	+50	+11
Mining and metallurgical.....	-30	-19	-13	-25	-24	-1	-24	-22	-3	+1	-7	+8	+54	+33	+16
College course incomplete:															
Civil, agricultural, and architectural.....	-25	-21	-5	-26	-21	-6	-22	-15	-8	-12	-9	-3	-19	-20	+1
Mechanical and others.....	-41	-27	-19	-33	-29	-5	-24	-21	-4	-14	-15	0	-15	-23	+10
Noncollegiate technical course:															
Civil, agricultural, and architectural.....	-29	-20	-11	-31	-19	-15	-28	-21	-9	-29	-17	-15	+5	+7	-2
Mechanical and others.....	-45	-23	-28	-29	-25	-5	-30	-24	-8	-19	-21	-5	-22	-18	-5
Secondary school education.....	-24	-17	-9	-19	-16	-4	-21	-14	-7	-11	-12	+1	-17	-29	+17

¹ Includes chemical and ceramic, electrical, industrial, and mining and metallurgical engineers.

² Less than 10 engineers reported.

TABLE 12.—Percentage Decreases in Median Annual Earnings Over Period 1929–34, for Corresponding Years After Graduation, by Type of Education

[Without regard to employment status reported]

Type of education	Percent of decrease in income, at end of specified period after graduation					
	2 years	5 years	10 years	20 years	30 years	37 years
Postgraduates.....	-53	-36	-25	-27	-22	-27
Nonengineering graduates.....	-36	-35	-32	-10	-24	-20
First-degree engineering graduates:						
Chemical and ceramic.....	-38	-38	-35	-35	-23	(¹)
Civil, agricultural, and architectural.....	-38	-35	-33	-27	-31	-32
Electrical.....	-45	-39	-34	-23	-22	-22
Mechanical and industrial.....	-44	-35	-36	-34	-35	-38
Mining and metallurgical.....	-42	-43	-39	-32	-26	-34
College course incomplete:						
Civil, agricultural, and architectural.....	-39	-35	-31	-29	-26	-25
Mechanical and others ¹	-40	-40	-39	-32	-32	-35
Noncollegiate technical course:						
Civil, agricultural, and architectural.....	(¹)	-25	-36	-29	-30	-32
Mechanical and others ¹	-31	-43	-39	-35	-32	-33
Secondary-school education.....	-26	-33	-36	-18	-25	-19

¹ Includes chemical and ceramic, electrical, industrial, and mining and metallurgical engineers.² Less than 10 engineers reported in 1934.

At 5 years after graduation the range of decreases of earnings over the period 1929–34 was from 25 to 43 percent. At 10 years after graduation, the range was from 25 to 39 percent, while even at 30 years after graduation the percentage decreases ranged only from 22 to 35 percent. It will, however, be noted that the extremes of the ranges are the exception, indicating that regardless of type of education, the incomes of engineers of identical ages in 1929 and 1934 suffered about the same from the depression.

It cannot be too strongly emphasized that these data relate only to what engineers of various ages were earning in 1929, 1932, and 1934. Since there are no better data available, it is almost inevitable that the figures will be used to predict what young engineers may expect to earn 10 or 15 years hence. For that reason, it is important to emphasize the severe limitations which attach to the data in this connection.

The first point—that the general level of engineering income fluctuates from year to year—needs merely to be mentioned in passing. Therefore, the absolute level of incomes for engineers with any given amount of experience cannot be forecast for any future year.

The chief danger to be guarded against is the assumption that the income relationships for 1934 will hold in some future year. A cautious use of such information may add to the value of the advice of those who are directing young men into the various fields of specialization. A careless assumption that this same relationship will hold 20 years hence for future graduates will make the resulting advice dangerous.

The tabulations show merely the facts of the income distribution in 1934 or some other particular year. For example, chemical and ceramic engineers 20 years after graduation averaged \$4,100 and one-quarter of such engineers earned more than \$6,000. On the other hand, civil engineers 20 years after graduation averaged \$3,100 and the best-paid quarter averaged only \$4,100 or more. It is evident, therefore, that men graduating from college in 1914 advanced on the whole to higher levels of income if their college work had been in the field of chemical or ceramic engineering than if it had been in the field of civil engineering. This much is fact.

But it must not be concluded from these data on income alone that it is wise to encourage men entering college in 1937 to specialize in chemical and ceramic engineering and to discourage their entering the field of civil engineering. Such advice will be sound only if the conditions surrounding the two fields of engineering and their prospects for the next 20 years are similar to the conditions of 1914 to 1934. Years of experience are themselves a factor in determining what kind of engineers are available. It is quite possible that there may be a relative scarcity of engineers with a given type of academic background and with 20 years of experience, while at the same time the supply of younger engineers with that same type of formal education may have become excessive. It is quite easy to see that a special scarcity value may have attached in 1934 to chemical engineers that did not accrue to civil engineers graduating in 1914. There was a tremendous expansion of the chemical industry in the United States during and following the war. It is a matter of common knowledge that such enterprises had the greatest difficulty in finding sufficient men with the requisite education and experience. On the other hand, while there are more civil engineers and more jobs for civil engineers than in 1914, a decrease in certain types of civil engineering work—as, for example, the construction of new railroads—has acted to restrain the development of relative scarcity values such as may have attached to chemical engineers.

At the same time it is impossible to make a comparison of the earnings of the younger engineers in the several professional classes and to conclude that the relationship between the professional groups will hold when they have had 20 years' experience. Thus in 1934 we find that chemical and ceramic engineers who graduated in 1932 averaged \$1,286, whereas civil and mechanical engineers averaged \$1,384. The statistics do not preclude the possibility that there is a longer period of apprenticeship for some types of engineering work than for others and that, following such a period of apprenticeship, there may be a more rapid advancement in the one line than in the other, ultimately to a higher level of income.

Conclusions as to the relative desirability of entering one type of engineering rather than another should be drawn only by those with

an intimate acquaintance with all fields of engineering. Available statistics are probably a less satisfactory basis for advice than would be the pooled nonstatistical judgments of a number of people with a wide knowledge of the engineering profession and its opportunities. The statistical materials of this study can be used safely in projection only to fortify the judgments and forecasts of such individuals. To those who know not only the present situation of the various professional groups but also the changing background of those professions over the past few decades, the income data will have particular significance. One who knows how the supply of and demand for particular types of engineering training has changed can make allowances and may attempt to estimate the most probable changes in future relationships. He will be helped to appraise the state of the current market for engineering services by earlier articles in which has been indicated the extent to which recent engineering graduates have been able to find engineering jobs.

The statistics which are presented here have a value that varies with the richness of the background of the user. Educational advisers and directors are performing specialized work and by the very nature of their work must guess what the future holds in store for various professions. Their prognosis becomes better if it is based on an extensive and accurate knowledge of existing conditions. This basis of knowledge the Bureau supplies on a hitherto unprecedented scale. The Bureau has attempted as comprehensive an analysis of recently existing relationships as its resources permit, and will welcome further critical analysis from any source of the detailed materials.

The Bureau has carefully refrained in this article from describing differences in the average incomes of graduate and nongraduate engineers as a measure of the value of a completed college course in engineering. From the data in hand, it is impossible to determine whether the differences are due to the fact that given individuals have received a college education or to other factors. It is possible that the differences in income arise from an initial process of selection. It is also possible that a prejudice in favor of the college graduate affords him better opportunities to acquire valuable experience than are given to the noncollege graduate. In such case, the advantages would arise not from formal education which the man had received but from his status as a college graduate.

It is a matter of common belief that college training has economic value for the prospective engineer. The figures in this study support this belief but cannot be taken as conclusive proof. Rather more conclusively they prove the great importance of other factors in addition to formal education. If formal education is an asset, the young graduate engineer should advance more rapidly than the non-graduate of corresponding age. This does happen. The data thus

furnish supporting evidence as to the value of a formal education. But were formal education an all-important element in determining income in these early years, there should come a point at which no further relative spread developed between the average earnings of college graduates and nongraduates.

The facts show that the spread does increase. The difference is greater both in absolute terms and in relative terms after 30 or 40 years of experience than it is after 10 or 15 years of experience. This increased spread not only is noted with reference to the average of the two classes but applies at the five levels that have been studied. It was found not only in 1929 but also in 1932 and 1934.

It can hardly be argued that the scholastic background of engineers who entered the profession in 1900 is a controlling factor with reference to their earnings in 1929 and 1934. Certainly, the value of their services is no longer primarily dependent upon the odds and ends of information which they acquired in college, although it is possible that habits of thinking and study which the engineer received in his college days constitute a permanent legacy. By and large the factors controlling the value of a man's engineering services after 30 years or more of experience must be primarily his native capacity and the training which he has received on the various jobs that he has performed.

As regards native capacity, there is reason to believe that, on the average, better material will be found among college graduates than among those who failed to complete a college course. There are of course many individuals who are unable to complete an engineering course for financial reasons. There are also many individuals of limited capacity who receive degrees. But there is also a wholesale process of weeding out that goes on in the engineering schools. Thus even the differences in income shown in the earliest years of experience may reflect differences in capacity rather than differences arising from the value of the formal training.

Whether ability is more important than the differences in the kinds of experience that are open to the college graduate and the nongraduate, it is impossible to tell. It is a matter of common knowledge that for a number of years college education has been thought of as a normal prerequisite to engineering work. A number of large employers of engineers deliberately differentiate between the college graduate and the nongraduate, offering the young engineer with a college education opportunities for training on the job which either are not available to the nongraduate or are open to him after special consideration rather than as a matter of routine.

It must be noted that this latter type of advantage will tend increasingly to accrue to the status of the graduate as opposed to the nongraduate. In this sense status is gained by graduation, to some

extent no longer with regard to the value of the formal education as such. The more common a college education becomes, and the more widespread the assumption of a difference in capacity between the college graduate and the nongraduate becomes, the more certain it is that employers will discriminate in favor of the college graduate. Such discrimination means that the college graduate will generally be given more favorable opportunities for training on the job than the nongraduate of equal capacity.

It is known, however, that many large employers of young engineers have already developed a highly selective process of employment in interviewing candidates from engineering colleges. They may assume that in general college graduates are more promising material than nongraduates. They no longer recognize the mere fact of graduation as evidence of employability and give special status only to those who graduate with a standing substantially better than the average of the class. Thus the advantage of status which may have accrued a number of years ago through the fact of college graduation alone now accrues in equal measure only to graduation with exceptional standing.

The candidate for a position in the engineering profession should study carefully the tables which will be presented in the final bulletin not only for average earnings (as in table 9) but also for the upper and lower 10 and 25 percent of the engineers. Table 9 showed clearly enough that a young man is well advised to enter the profession after successfully completing a period of formal education beyond the high-school level. An earlier chapter on education indicated that college training was coming to be a prerequisite for entrance to the profession. But it is unwise to rely heavily on the value of a college education per se.

The present study gives conclusive demonstration of differences of income which generally reflect different degrees of capacity. The lot of the college graduate may be somewhat easier than that of the nongraduate. But even in 1929 the lowest 10 percent of the college graduates in civil engineering were earning less than \$2,500 after 10 years of experience and \$2,700 after 20 years of experience. These figures are to be compared with the average earnings of \$3,600 and \$4,400 for these respective groups. On the other hand, the upper 10 percent of the civil engineers whose college course was incomplete earned \$5,200 or more after 10 years of experience and \$7,600 or more after 20 years of experience. The upper 10 percent of the engineers with only a secondary-school education similarly showed earnings substantially above those of the average college graduate. In other words, graduation from an engineering school is no guaranty of a satisfactory income, while there is still apparently an opportunity for a man of outstanding capacity to secure far better than an average engineering income even though he has not attended college.

The most significant differences in income revealed by the present survey are not the differences in the average income received by individuals who have received a college degree and those who have not. Nor are they the differences as between individuals who have entered one professional class rather than another. These differences on the whole are moderate, though they are large enough to prove the desirability of choosing well both the field of endeavor and the type of training best adapted to advancement in that field. The most striking differences are those which exist within each profession and within each group classified on the basis of its educational background. One out of 10 of the engineers in each such group secured an income several times as great as the average for the group as a whole. At least one out of 10 at the bottom of each such group, whether a college graduate or not, whether a chemical engineer or a civil engineer, whether a man with many years of service or freshly out of college, is hardly to be distinguished as regards income from a skilled wage earner.

We do not feel ourselves competent to project from these data what the future holds in store for the high-school boy who must be advised as to what type of training will be most advantageous. We hope he may be fortunate enough to encounter wise advice. We dare do no more than point out that in 1929 the average income of graduate engineers with 10 years' experience ranged from \$3,600 to \$4,600 in the various professional classes. In 1929 only 6.4 percent of the incomes in the United States exceeded \$4,000. Furthermore, engineering is a profession in which earning capacity advances and is sustained until late in life. But if in these respects the profession appears attractive on the average, its rewards are not particularly attractive to the poorer or less fortunate engineers. Even in 1929 the lowest-paid 10 percent of the engineers could hope for no more than \$2,500 to \$3,000, though they might stay in the profession for 40 years. In 1934, exposed as the profession was to the risks of unemployment, the lowest-paid 10 percent of the engineers with less than 5 years' experience after graduation earned less than \$1,000. Even with 10 to 30 years' experience they earned no more than \$1,000 to \$1,500.

SALARIES OF PUBLIC-HEALTH NURSES, 1937

THE salary most frequently paid to staff public-health nurses by private agencies in January 1937 and by public-health departments was \$125 per month. In 1937, however, 68 percent of the staff nurses were being paid \$125 or more per month, as compared with 59 percent in 1936. In 1937, also, more than half of those receiving over \$125 were being paid \$150 or more. In private agencies 43 percent of the staff nurses received over \$125 per month, whereas 60 percent of the staff nurses of public-health departments were paid more than this amount. The above statistics and the following tables are taken from a report on salaries of public health nurses in 1937,¹ by Anna J. Miller, in the June 1937 issue of *Public Health Nursing*.

The number of agencies included in the survey was 449 and the number of nurses was 8,228, employed as follows: By the 237 public-health nursing associations, 3,506; by the 108 health departments, 3,537; and by the 104 boards of education, 1,185.

In January 1937 the median monthly salary of staff nurses was \$123 in public-health nursing associations and \$135 in health departments, as reported in table 1, which gives the median monthly salaries of these nurses, classified by size of city in which the organization is located, by size of staff, and by geographic section. These medians range, in public-health nursing associations, from \$114 in cities with a population of 50,000 to 100,000 to \$141 in cities with a population of 1,000,000 or more. Considerable variation is also disclosed in the median salaries of staff nurses employed by health departments in different sections of the country. For example, \$149 was the reported median for the far West, while for the South the figure was \$119. The median salaries of staff nurses of the public-health nursing associations, however, in the various sections of the United States, did not differ notably from the median of \$123 for these agencies for the country as a whole (except in the South, where the median is only \$112). The median salary in health departments was above that of the nursing associations, in each of the geographic sections.

¹ Thirteenth annual survey.

TABLE 1.—Median Monthly Salaries of Staff Nurses, January 1937

Population of city, size of staff, and geographic section	Public-health nursing associations		Health departments	
	Number of nurses	Median monthly salary	Number of nurses	Median monthly salary
Population of city:				
1,000,000 and over.....	718	\$141	1,382	\$146
500,000 to 1,000,000.....	494	128	652	129
250,000 to 500,000.....	461	119	511	122
100,000 to 250,000.....	615	119	377	122
50,000 to 100,000.....	247	114	188	123
25,000 to 50,000.....	223	120	41	129
Less than 25,000.....	99	120	6	115
Rural.....	71	136	67	126
Total.....	2,928	123	3,224	135
Geographic section:				
New England.....	582	122	332	137
Middle Atlantic.....	1,115	129	1,119	143
South.....	264	112	401	119
Middle West.....	865	123	1,124	134
Far West.....	102	122	248	149
Total.....	2,928	123	3,224	135
Size of staff:				
100 persons and over.....	807	136	1,640	144
50 to 99 persons.....	437	125	477	150
25 to 49 persons.....	489	116	420	120
10 to 24 persons.....	709	119	504	119
2 to 9 persons.....	462	120	180	123
1 person.....	24	144	3	145
Total.....	2,928	123	3,224	135

The median monthly salaries in 1937 of supervisors in nursing associations and in health departments were above those of the preceding year. For the nursing associations the median was \$155, and for the health departments, \$171—in each case an advance of \$3 over 1936. In table 2 the median monthly salaries of supervisors in 1937 are recorded. As in the previous year, the medians for the generalized group were higher than those for the specialized group.

TABLE 2.—Median Monthly Salaries of Supervisors of Public-Health Nursing, 1937

Nursing field	Public-health nursing associations		Health departments	
	Number of supervisors	Median monthly salary	Number of supervisors	Median monthly salary
Generalized.....	231	\$156	145	\$173
Specialized.....	86	152	86	163
Total.....	317	155	231	171

Twenty-seven agencies reported an educational director on their staffs, 22 private organizations and 5 health departments. In the former the minimum salary was \$135, the maximum \$265, and the median \$185. The median salary in these agencies increased with

the size of the staff. In the health departments the median is \$140, with a maximum of \$200 reported by the largest department in the group.

As indicated in table 3, the median salaries of directors of nursing rose with the size of staff they directed. (This was also the case with the median salaries of assistant directors.) The median for the director of a public-health nursing association was higher than for a director of health-department nurses in an organization of similar size.

TABLE 3.—Median Monthly Salaries of Directors and of Assistant Directors, by Size of Staff, 1937

Size of staff	Public-health nursing associations				Health departments ¹	
	Assistant directors		Directors		Directors	
	Number	Median monthly salary	Number	Median monthly salary	Number	Median monthly salary
100 persons and over.....	5	\$225	5	\$375	6	\$233
50 to 99 persons.....	6	248	9	360	8	205
25 to 49 persons.....	8	191	16	241	10	203
15 to 24 persons.....	8	170	26	240	16	178
10 to 14 persons.....	5	165	25	200	12	164
6 to 9 persons.....	5	150	39	193	10	155
2 to 5 persons.....	5	125	77	160	6	133
Total.....	42	-----	197	-----	68	-----

¹ As only 9 departments reported having assistant directors, these officials are not included in the table.

Salaries of School Nurses

The 104 boards of education covered in the January 1937 survey employed 1,135 staff nurses in schools. Furthermore, 36 health departments had 353 staff nurses who were specialized school nurses. The most usual annual salary reported for these school nurses combined was \$1,800—an advance of \$100 over 1936. More than one-third of the school nurses were paid \$1,800 or over. The minimum and maximum reported for 1937 were \$750 and \$2,900 respectively. The range in 1936 was from \$600 to \$2,200. In the far West over half of the school nurses were reported as receiving \$1,800 or more per annum, while the 125 school nurses in the South whose salaries were reported were receiving less than \$1,700 a year.

Only 44 of the boards of education included in the study reported having nurse-directors of school nurses. The salaries for such positions ranged from \$1,250 to \$4,600 per annum, the median salary being \$1,770 in an organization with two to five nurses, and \$2,900 in a department with 50 to 100 nurses.

Salary Schedules and Increases

Approximately one-half of the private organizations reported salary increases subsequent to January 1936. About the same proportion of the health departments raised salaries after that date, and two-thirds of the boards of education replying to this inquiry had done so.

In the majority of cases, where increases were general rather than for particular considerations in individual cases, the increase was a restoration of cut previously made rather than an automatic increase due in accordance with a salary schedule.

In approximately 40 percent of both the private agencies and the health departments, salaries are at their pre-cut level. This is true of the salaries of nurses in only 22 percent of the boards of education. Last year this figure was 10 percent for these departments. In almost half of the agencies in which salaries have not been restored in full, they are 10 percent or less below the level prior to cuts.

Minimum and Maximum Scales

Salary schedules specifying definite minimums and automatic increases after fixed periods of service were effective in January 1937 for staff nurses, in 39 percent of the public-health nursing associations, 23 percent of the health departments, and 42 percent of the departments of education. These various schedules are given in tables 4 and 5. For a staff nurse employed by public-health nursing associations, the most frequent minimum was \$100 and the most usual maximum, \$140.

The number of health departments represented are too few to warrant similar conclusions for these organizations. The maximum schedule for staff nurses for 10 out of the 42 school boards was \$1,800.

TABLE 4.—Distribution of Agencies by Minimum and Maximum Salaries for Staff Nurses

Salary per month	Minimum		Maximum		Salary per month	Minimum		Maximum	
	Public-health nursing associations	Health departments	Public-health nursing associations	Health departments		Public-health nursing associations	Health departments	Public-health nursing associations	Health departments
\$50.....	1	-----	-----	-----	\$135.....	3	1	9	2
\$70.....	1	-----	-----	-----	\$140.....	-----	2	15	2
\$80.....	2	-----	-----	-----	\$145.....	1	2	3	1
\$85.....	1	-----	-----	-----	\$150.....	-----	-----	11	4
\$90.....	6	1	-----	-----	\$155.....	-----	-----	-----	1
\$95.....	2	-----	-----	-----	\$160.....	-----	-----	1	3
\$100.....	22	4	1	-----	\$165.....	-----	-----	2	-----
\$105.....	6	1	2	-----	\$170.....	-----	-----	-----	2
\$110.....	16	2	2	1	\$175.....	-----	-----	1	-----
\$115.....	14	2	7	-----	No information.....	-----	-----	1	-----
\$120.....	1	2	13	2					
\$125.....	10	5	13	3					
\$130.....	1	-----	6	1	Total.....	87	22	87	22

TABLE 5.—*Distribution of Boards of Education by Minimum and Maximum Salaries for School Nurses*

Annual salary	Mini- mum	Maxi- mum	Annual salary	Mini- mum	Maxi- mum	Annual salary	Mini- mum	Maxi- mum
\$900.....	1		\$1,400.....	2	2	\$2,050.....	1	
\$950.....	2		\$1,500.....	5	4	\$2,100.....		1
\$1,000.....	7		\$1,600.....		3	\$2,300.....		1
\$1,050.....	1		\$1,650.....		1	\$2,400.....		1
\$1,100.....	7		\$1,700.....		2	\$2,800.....		1
\$1,150.....	3		\$1,750.....		1	\$3,500.....		1
\$1,200.....	7		\$1,800.....		10			
\$1,250.....	2		\$1,850.....		3	Total.....	42	42
\$1,300.....	3	4	\$1,900.....		2			
\$1,350.....	1		\$2,000.....		5			

Some modifications are made in salary scales in the nursing associations and boards of education on account of preparation beyond minimum requirements.



WAGES IN THE METAL INDUSTRY IN THE NETHERLANDS, 1918 TO 1936

THE following table shows average hourly wages paid, and index numbers thereof, in the metal industry in the Netherlands for the second half of each year from 1918 to 1935, inclusive,¹ and for both the first and second half-year periods of 1936.

Average Hourly Wages (and Indexes) in Metal Trades in the Netherlands, 1918 to 1936

[Average exchange rate of florin in 1936=64.9 cents]

Second half of—	Average hourly wages (in florins) of—				Index numbers (1926-30=100)			
	Skilled workers	Semi-skilled workers	Unskilled workers	All 3 classes	Skilled workers	Semi-skilled workers	Unskilled workers	All 3 classes
1918.....	0.42	0.38	0.33	0.39	59	60	60	60
1919.....	.64	.57	.51	.59	90	90	93	91
1920.....	.81	.71	.63	.74	114	113	115	114
1921.....	.84	.74	.64	.77	118	117	116	118
1922.....	.72	.63	.55	.66	101	100	100	102
1923.....	.65	.57	.48	.60	92	90	87	92
1924.....	.62	.54	.47	.56	87	86	85	86
1925.....	.65	.58	.47	.59	92	92	85	91
1926.....	.67	.59	.52	.61	94	94	95	94
1927.....	.69	.62	.53	.63	97	98	96	97
1928.....	.72	.64	.55	.66	101	102	100	102
1929.....	.75	.66	.58	.68	106	105	105	105
1930.....	.76	.67	.59	.70	107	106	107	108
1931.....	.74	.64	.57	.68	104	102	104	105
1932.....	.67	.59	.53	.62	94	94	96	95
1933.....	.63	.57	.52	.60	89	90	95	92
1934.....	.60	.55	.49	.57	85	87	89	88
1935.....	.57	.53	.46	.54	80	84	84	83
1936: First half.....	.56	.52	.46	.53	79	83	84	82
1936: Second half.....	.56	.52	.46	.53	79	82	84	81

¹ Maandschrift van het Centraal Bureau voor de Statistiek, The Hague, Apr. 30, 1937, p. 629: Loonen in de Metaalindustrie, 2e halfjaar 1936.

Employment Offices

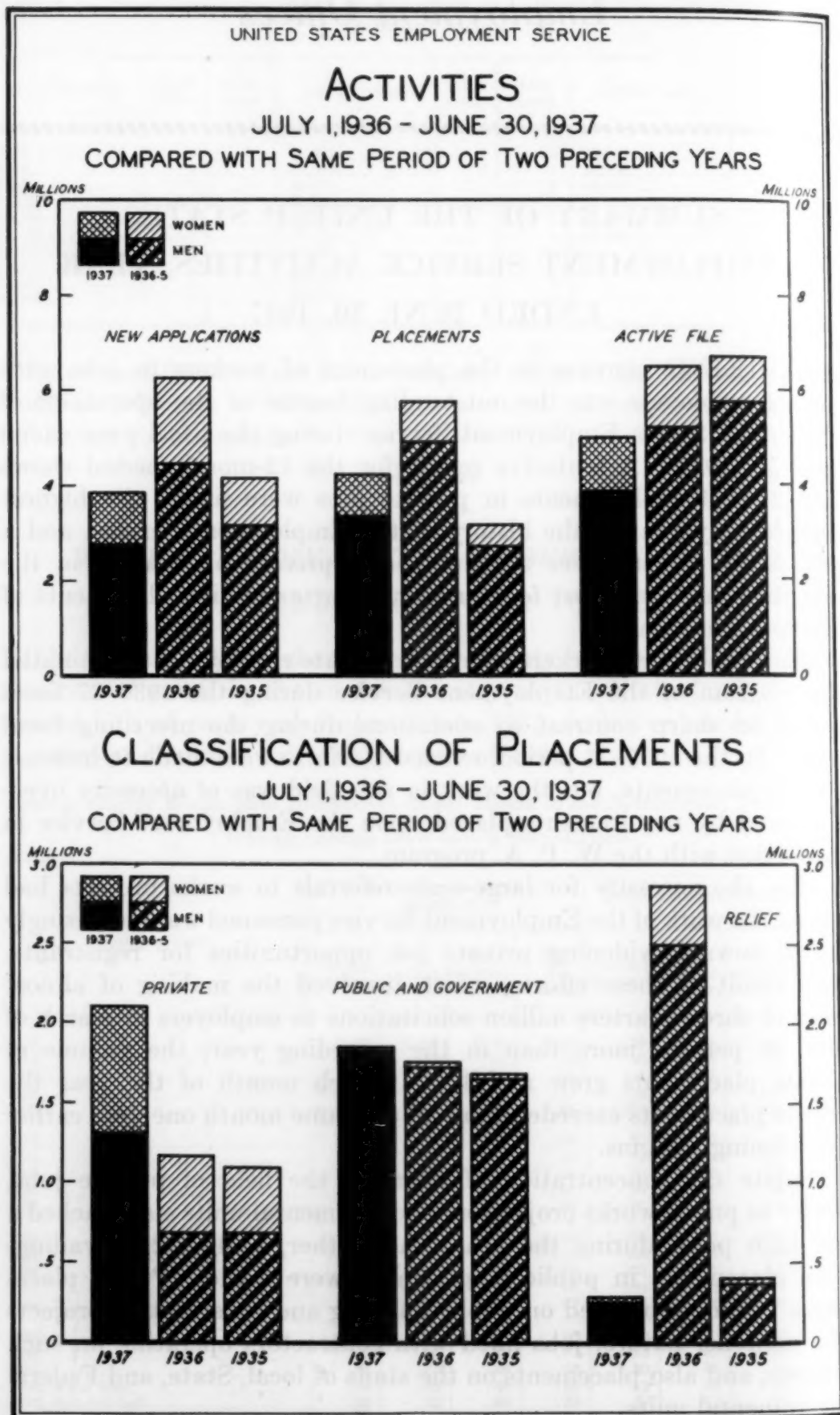
SUMMARY OF THE UNITED STATES EMPLOYMENT SERVICE ACTIVITIES, YEAR ENDED JUNE 30, 1937

A STRIKING increase in the placement of workers in jobs with private employers was the outstanding feature of the operations of the United States Employment Service during the fiscal year ended June 30, 1937. A tentative report for the 12-month period shows that 2,100,600 placements in private jobs were made, the highest total for any year in the history of the Employment Service, and a gain of 81 percent over the number of private placements in the preceding year. Almost four and one-quarter million placements of all types were made.

Efforts to return workers to jobs in private employment dominated the program of the Employment Service during the 1936-37 fiscal period, in sharp contrast to operations during the preceding fiscal year. In the 1935-36 period, extensive efforts were made to increase private placements, but the work in this field was of necessity overshadowed by requirements placed upon the Employment Service in connection with the W. P. A. program.

After the necessity for large-scale referrals to works projects had passed, the work of the Employment Service personnel was increasingly shifted toward widening private job opportunities for registrants. As a result of these efforts, which involved the making of almost one and three-quarters million solicitations to employers in search of jobs, 96 percent more than in the preceding year, the volume of private placements grew rapidly. In each month of the year the private placements exceeded those of the same month one year earlier by widening margins.

Despite the concentration of effort in the field of private jobs, service to public works projects and governmental units also reached a new high point during the year. Altogether, 1,846,322 prevailing-wage placements in public employment were made. Public placements include jobs filled on public building and construction projects of a nonrelief nature, jobs filled with contractors operating on such projects, and also placements on the staffs of local, State, and Federal governmental units.



Assignments of workers on relief projects dropped to low levels. Continuing the declines from the peak levels of the 1935-36 period, relief assignments dropped to a volume of less than 10 percent of the number of such placements during the preceding year, only 284,930 relief placements being made. The relief placements made up only 6.7 percent of the total placements during the 12 months ended June 30, 1937, while one year earlier they had accounted for 49.6 percent of the year's total placements.

The volume of job seekers registered with the Employment Service during the year also declined materially. A portion of this decline was due, no doubt, to the fact that during the preceding year large numbers of persons were registered in connection with the W. P. A. program, for which registration with the Employment Service was a prerequisite to assignment on projects. During the 1936-37 period, on the contrary, all registrations were entirely voluntary and were made without reference to any special program.

The number of persons actively seeking work through the employment offices declined steadily during the latter months of the fiscal year. On June 30, 1937, 5,016,014 persons were actively registered as seeking work, the lowest volume in the active file since statistics of the number of job seekers have been available.

Activities of United States Employment Service, July 1, 1936, to June 30, 1937

[Preliminary report, subject to revision]

Activity	Year ended June 30, 1937	Percent of change from previous year	Men	Women
New applications.....	3, 876, 663	-39. 7	2, 734, 553	1, 142, 110
Total placements.....	4, 231, 852	-26. 8	3, 382, 727	849, 125
Total nonrelief placements.....	3, 946, 922	+35. 5	3, 132, 959	813, 963
Private.....	2, 100, 600	+81. 0	1, 304, 136	796, 464
Public.....	1, 846, 322	+5. 4	1, 828, 823	17, 499
W. P. A. and relief placements.....	284, 930	-90. 1	249, 768	35, 162
Active file.....	5, 016, 014	-22. 8	3, 894, 507	1, 121, 507

OPERATIONS OF THE UNITED STATES EMPLOYMENT SERVICE IN JUNE 1937

NEARLY a quarter of a million placements of job seekers in private employment were made by offices of the United States Employment Service during June. Including these placements and jobs filled in public and relief work, 374,027 placements of all types were reported for the month.

The volume of 224,692 placements of workers in private employment continues the upward trend in the number of jobs found with private employers. The June total this year was 81.9 percent higher than the number reported in June 1936 and represents the second highest number reported in any single month in the history of the present Employment Service. As in past years, a moderate seasonal decline was experienced, the volume for June being 6.7 percent less than the volume for May. This is a smaller seasonal decline than has been reported in any previous year.

Private placements included 141,537 openings filled by male job seekers and 83,155 in which women were hired.

Personnel of the employment offices made 160,967 visits to employers during June in an effort to widen the job opportunities for registrants. A total of 45,542 of the field visits represented solicitation of employers never before visited, while the remainder were made to employers who had been contacted previously by the employment offices.

The total of 374,027 placements of all types included 143,299 placements of persons in public nonrelief work, an increase of 6.8 percent above the level reported in May. These jobs, which were almost entirely filled by men, were on public nonrelief building-construction projects, such as those of the Public Works Administration, the Bureau of Public Roads, and similar agencies of both the Federal and local governmental units, and in regular governmental employment. Jobs with private contractors operating on public construction projects were also included in this category.

Employment offices assisted in making 6,036 assignments in security-wage relief work during the month. Over one-half of these assignments were made in two States, Pennsylvania and Montana, which together accounted for 3,233. Only 450 of the security-wage relief jobs were filled by women.

Over one-third of a million new applications from previously unregistered job seekers were received by employment offices in June. As in past years, a seasonal increase in the number of new applicants occurred from May to June, probably largely attributable to the registration of recent students leaving school. Such increases have been noted every year since the organization of the present Employ-

ment Service. The volume of new applications was 8.7 percent less than the number received in June 1936.

The number of job seekers actively registered with the employment offices throughout the country as seeking work at the end of June declined to 5,016,014. This was the lowest number reported for any month since statistics of the total number of registered job seekers have been available. The number at the end of June was 5.5 percent less than the number registered at the close of May and 22.8 percent less than the number registered for work in June 1936, 1 year earlier. The greatest relative decline during June was reported in the State of Vermont where the operating offices reported that the decrease was due primarily to increased private employment as well as a seasonal increase in public construction projects. The active file was composed of 3,894,507 men, 77.6 percent of the total, and 1,121,507 women. The number of men in the active file decreased 6.3 percent from May, but the number of women decreased only 2.7 percent.

Placements of veterans during June numbered 21,957, of which 10,942 were in private employment. At the close of the month 271,786 veterans were registered in the active file as seeking employment. A summary table of veteran activities follows:

TABLE 1.—*Summary of Veterans' Activities, June 1937*

Activity	Number	Percent of change from—		
		May 1937	June 1936	June 1935
New applications.....	9,417	-0.6	+37.9	-67.9
Total placements.....	21,957	-8.9	-23.1	-30.6
Private.....	10,942	-14.2	+131.0	+75.0
Public.....	10,638	-2.4	-46.3	-58.1
Relief.....	377	-13.5	-90.6	(¹)
Active file.....	271,786	-7.9	-25.0	-38.7

¹ Relief placements not reported for 1935.

The following summary table indicates the principal operating totals of the employment offices for June with the percentage of change from the previous month and the same month in previous years. Information for the individual States is presented in tables 3 and 4.

TABLE 2.—*Summary of Operations of United States Employment Service, June 1937*

Activity	Number	Percent of change from—		
		May 1937	June 1936	June 1935
New applications.....	337,930	+24.2	-8.7	-49.0
Total placements.....	374,027	-1.6	-21.0	+37.7
Private.....	224,692	-6.7	+81.9	+134.6
Public.....	143,299	+6.8	-46.4	-6.2
Relief.....	6,036	+16.3	-92.7	-73.9
Active file.....	5,016,014	-5.5	-22.8	-25.3

TABLE 3.—Operations of United States Employment Service, June 1937

State	TOTAL						New applications		Active file	
	Placements						Number	Percent of change from May	June 30, 1937	Percent of change from May 31
	Total	Private		Public		Relief ¹				
		Number	Percent of change from May	Number	Percent of change from May					
United States.....	374,027	224,692	-6.7	143,209	+6.8	6,036	337,930	+24.2	5,016,014	-5.5
Alabama.....	5,805	4,043	-28.4	1,730	-3.2	32	3,250	+33.4	66,143	-17.1
Arizona.....	2,164	1,056	-5.9	1,097	+2.2	11	1,682	+48.7	17,724	-12.7
Arkansas.....	4,220	2,319	+83.2	1,835	-5.2	66	2,632	-16.3	52,530	-13.0
California.....	25,721	18,449	-6.3	7,231	-9.2	41	29,256	+41.2	204,629	-6.5
Colorado.....	6,185	3,809	-7.7	2,323	+20.4	53	5,122	+45.5	54,752	-1.1
Connecticut.....	3,786	2,808	-7.2	978	+1.0	0	6,606	+39.8	45,245	-6.9
Delaware.....	2,177	1,685	+35.2	486	-18.3	6	1,252	-1.7	10,334	+2.5
Florida.....	5,740	3,076	-13.7	2,644	+25.2	20	6,198	+15.2	63,906	-8
Georgia.....	6,752	3,356	-8.1	3,364	+21.3	32	4,990	+15.6	101,673	-16.5
Idaho.....	3,167	1,476	+8.5	1,691	+61.4	0	1,958	+10.6	17,471	-8.2
Illinois.....	27,459	21,868	-4.8	5,503	+10.0	88	27,016	+33.5	297,181	-3.5
Indiana.....	7,086	5,404	-8.4	1,678	+17.3	4	11,378	+33.5	107,735	-9.8
Iowa.....	9,422	4,878	-18.5	4,380	+12.2	164	6,769	+40.7	56,323	-6.0
Kansas.....	5,579	2,877	+39.7	2,697	-9.5	5	3,077	+6.2	67,698	-4.9
Kentucky.....	5,207	2,588	-19.2	2,598	+1.3	21	6,484	+2.4	137,066	-6.2
Louisiana.....	2,598	1,463	-9.5	1,132	+8.3	3	5,476	+25.5	71,525	-2.7
Maine.....	2,357	421	+55.9	1,936	+29.3	0	1,542	+57.5	20,930	-11.8
Maryland.....	3,285	1,545	-17.6	1,739	+51.9	1	2,855	+37.7	47,877	-5.3
Massachusetts.....	3,461	2,129	-9.4	1,329	-13.6	3	6,402	+24.5	286,730	-2.0
Michigan.....	12,252	8,504	-8.3	3,270	+9	478	10,276	+12.6	119,204	-10.0
Minnesota.....	10,453	7,133	+1.9	3,260	-4	60	8,233	+48.6	116,581	-9.0
Mississippi.....	7,307	162	+27.6	7,139	+48.2	6	7,729	+32.9	76,074	-9.5
Missouri.....	9,065	4,204	+7	4,821	+23.8	40	8,016	+23.7	177,443	-10.8
Montana.....	5,448	861	-17.6	3,336	+17.8	1,251	2,449	+54.2	31,212	-3.5
Nebraska.....	5,935	2,115	+12.0	3,808	+57.6	12	4,032	+34.9	41,114	-8.4
Nevada.....	1,206	409	-8.1	797	-14.8	0	891	+2.3	4,233	-5.4
New Hampshire.....	1,291	742	+29.3	549	-3.5	0	1,431	+84.9	17,871	-9.7
New Jersey.....	6,089	5,203	-7.6	868	-23.1	18	9,772	+33.8	184,912	-2.3
New Mexico.....	2,017	860	-22.8	1,154	+6.7	3	1,276	+10.2	34,022	+1.0
New York.....	25,716	18,001	-13.0	7,612	-6.0	103	21,252	+11.7	359,660	-2.7
North Carolina.....	11,048	6,628	+36.3	4,420	-2.0	0	7,273	+5.5	81,573	-3.1
North Dakota.....	3,637	1,523	+5.7	2,061	-15.6	53	2,127	+4.2	32,355	-4.7
Ohio.....	23,608	18,009	-10.6	5,246	-1.0	353	18,805	+48.1	272,601	-7.0
Oklahoma.....	4,758	2,478	-45.1	2,270	-9.7	10	3,805	-7.2	108,539	-7.8
Oregon.....	4,647	2,679	+28.7	1,953	-3.8	15	4,328	+33.0	43,806	-4.6
Pennsylvania.....	19,675	8,247	-1.9	9,446	+3.5	1,982	23,240	+49.5	756,090	-7
Rhode Island.....	1,279	932	+3.6	308	-4.9	39	2,092	+47.6	36,527	-6.2
South Carolina.....	5,044	1,627	-12.4	3,399	-1.5	18	3,215	+19.8	48,836	-7.1
South Dakota.....	4,063	1,224	+1.2	2,821	+23.7	18	2,671	+44.9	45,542	+8
Tennessee.....	5,732	2,099	-13.0	3,628	+11.8	5	4,548	-4.4	157,775	-4.0
Texas.....	31,704	24,440	-14.0	7,191	+9	73	19,797	-17.8	183,294	-6.0
Utah.....	3,451	2,295	+94.0	1,085	+14.3	71	2,254	+77.8	17,930	-3.8
Vermont.....	1,491	754	-4.4	736	+4	1	869	+14.8	3,005	-46.2
Virginia.....	7,641	3,360	-10.8	4,275	+17.4	6	4,666	+16.7	54,235	-9.4
Washington.....	7,066	2,868	+16.0	3,870	-14.1	348	5,765	+21.9	58,964	-19.5
West Virginia.....	3,471	1,888	-31.3	1,575	+10.3	8	3,205	+23.7	78,073	-12.8
Wisconsin.....	10,978	6,655	-8.7	4,141	+25.6	182	15,425	+65.7	115,521	+7
Wyoming.....	2,958	936	+20.6	1,689	+13.6	333	1,593	+43.1	6,277	-12.0
Dist. of Columbia.....	2,806	2,606	+3.7	200	+17.6	0	2,950	+37.1	25,273	-7.5

¹ Includes only security-wage placements on work-relief projects.

TABLE 3.—Operations of United States Employment Service, June 1937—Continued

MEN

State	Placements					New applica- tions		Active file		
	Total	Private		Public		Relief ¹	Num- ber	Percent of change from May	June 30, 1937	Percent of change from May 31
		Num- ber	Percent of change from May	Num- ber	Percent of change from May					
United States.....	289,313	141,537	-9.5	142,190	+6.7	5,586	225,875	+22.7	3,894,507	-6.3
Alabama.....	4,709	2,960	-28.8	1,721	-2.7	28	2,186	-36.8	47,151	-18.9
Arizona.....	1,818	719	-12.6	1,088	+2.2	11	1,357	+53.3	14,638	-12.6
Arkansas.....	3,461	1,566	+83.8	1,829	-5.1	66	1,880	-22.1	42,203	-13.6
California.....	20,295	13,091	-10.0	7,167	-9.4	37	20,324	+41.2	149,784	-7.0
Colorado.....	5,067	2,718	-14.0	2,307	+20.4	42	3,460	+41.7	42,099	-2.0
Connecticut.....	2,431	1,472	-16.4	959	+1.4	0	3,620	+35.4	33,279	-8.9
Delaware.....	1,417	929	+45.4	484	-18.4	4	720	+16.1	7,336	+2.1
Florida.....	4,762	2,109	-17.6	2,637	+25.3	16	4,131	+16.2	47,902	-1.7
Georgia.....	6,202	2,827	+18.4	3,350	+21.7	25	3,751	+28.1	68,656	-19.1
Idaho.....	2,813	1,129	+13.8	1,684	+60.8	0	1,584	+9.5	15,212	-8.6
Illinois.....	18,846	13,308	-9.2	5,477	+11.0	61	17,289	+28.7	237,912	-5.0
Indiana.....	4,387	2,709	-20.0	1,676	+17.7	2	7,259	+22.9	87,903	-10.4
Iowa.....	7,677	3,156	-20.2	4,361	+12.5	160	4,268	+36.7	44,648	-7.7
Kansas.....	5,026	2,332	+47.7	2,690	-9.5	4	2,161	+1.0	53,941	-5.7
Kentucky.....	4,170	1,574	-26.3	2,575	+1.1	21	4,367	+2.9	108,837	-5.8
Louisiana.....	1,882	755	-25.5	1,127	+8.1	0	3,928	+28.6	57,100	-2.7
Maine.....	2,192	257	+54.8	1,935	+29.3	0	1,197	+54.1	18,213	-13.0
Maryland.....	2,853	1,121	-19.4	1,731	+51.7	1	2,061	+33.7	38,775	-4.5
Massachusetts.....	2,431	1,123	-14.9	1,305	-13.8	3	3,972	+19.9	210,605	-1.9
Michigan.....	9,261	5,582	-16.2	3,260	+1.4	419	7,063	+11.2	98,933	-11.7
Minnesota.....	7,546	4,253	-1.4	3,235	-9	58	5,134	+46.2	94,099	-10.8
Mississippi.....	7,255	124	+21.6	7,127	+48.0	4	6,397	+37.0	53,926	-11.8
Missouri.....	7,557	2,701	+7	4,816	+23.9	40	5,191	+24.9	143,051	-10.7
Montana.....	5,261	694	-22.2	3,323	+17.8	1,244	2,033	+55.0	25,693	-4.4
Nebraska.....	5,254	1,442	+20.4	3,800	+57.8	12	2,752	+37.3	33,495	-9.6
Nevada.....	1,118	325	-9.0	793	-14.9	0	751	-1.2	3,442	-7.6
New Hampshire.....	1,027	482	+43.0	545	-3.4	0	917	+93.1	13,628	-10.8
New Jersey.....	3,227	2,351	-19.4	860	-23.1	16	6,374	+35.3	146,191	-2.5
New Mexico.....	1,844	699	-17.3	1,143	+6.7	2	938	+20.3	28,564	+9
New York.....	17,390	9,891	-12.4	7,401	-7.8	98	13,706	+14.8	288,464	-2.9
North Carolina.....	7,659	3,261	+25.8	4,398	-2.0	0	4,910	+2.8	54,633	-4.7
North Dakota.....	3,185	1,081	+2.7	2,052	-15.6	52	1,451	-5.7	26,487	-5.2
Ohio.....	16,139	10,611	-11.2	5,194	-1.1	334	11,625	+42.0	214,142	-7.8
Oklahoma.....	3,567	1,314	-53.1	2,243	-9.8	10	2,382	-9.4	89,187	-7.7
Oregon.....	4,065	2,108	+31.8	1,942	-3.7	15	3,142	+33.9	35,017	-7.1
Pennsylvania.....	15,755	4,774	-2.7	9,201	+2.7	1,780	15,067	+51.7	588,188	-1.1
Rhode Island.....	835	496	+21.9	308	-4.9	31	1,092	+39.5	25,744	-9.5
South Carolina.....	4,558	1,154	-4.8	3,392	-1.5	12	2,774	+26.6	33,109	-6.8
South Dakota.....	3,742	930	+1.2	2,796	+23.2	16	1,676	+36.3	37,553	-1.0
Tennessee.....	4,705	1,073	-27.1	3,627	+12.0	5	3,233	-3.5	122,272	-4.6
Texas.....	25,543	18,321	-16.9	7,151	+0.7	71	13,083	-20.3	133,512	-7.1
Utah.....	2,571	1,419	+60.7	1,081	+14.6	71	1,363	+67.7	14,741	-8.4
Vermont.....	1,148	412	-14.3	735	+5	1	636	+25.7	2,308	-47.1
Virginia.....	5,935	1,670	+3.9	4,263	+17.2	2	3,570	+15.9	39,362	-9.7
Washington.....	6,270	2,088	+7.5	3,863	-14.1	319	4,190	+19.6	47,889	-22.2
West Virginia.....	2,529	969	-41.3	1,558	+10.2	2	2,170	+29.0	63,953	-12.5
Wisconsin.....	8,007	3,720	-12.2	4,124	+25.4	163	9,769	+63.5	88,762	-1.1
Wyoming.....	2,669	691	+24.5	1,680	+14.1	328	1,263	+40.0	5,003	-12.8
Dist. of Columbia.....	1,222	1,046	-2.6	176	+16.6	0	1,708	+39.1	16,965	-8.7

¹ Includes only security-wage placements on work-relief projects.

TABLE 3.—Operations of United States Employment Service, June 1937—Continued

WOMEN

State	Placements					New applica- tions		Active file		
	Total	Private		Public		Relief ¹	Number	Percent of change from May	June 30, 1937	Percent of change from May 31
		Num- ber	Percent of change from May	Num- ber	Percent of change from May					
United States.....	84,714	83,155	-1.3	1,109	+26.7	450	112,055	+27.3	1,121,507	-2.7
Alabama.....	1,096	1,083	-27.5	9	-55.0	4	1,064	-25.3	18,992	-12.5
Arizona.....	346	337	+12.7	9	+12.5	0	325	+32.1	3,086	-13.4
Arkansas.....	759	753	+81.9	6	-25.0	0	752	+2.7	10,327	-10.5
California.....	5,426	5,358	+4.2	64	+30.6	4	8,932	+41.2	54,845	-4.9
Colorado.....	1,118	1,091	+12.7	16	+23.1	11	1,662	+54.2	12,653	+2.2
Connecticut.....	1,355	1,336	+5.5	19	-13.6	0	2,986	+45.4	11,966	-1.0
Delaware.....	760	756	+24.5	2	0	2	532	-18.7	2,998	+3.6
Florida.....	978	967	-4.0	7	+16.7	4	2,067	+13.3	16,004	+1.7
Georgia.....	550	529	-58.2	14	-33.3	7	1,239	-10.7	33,017	-10.7
Idaho.....	354	347	-5.7	7	+600.0	0	374	+15.4	2,259	-5.4
Illinois.....	8,613	8,560	+3.0	26	-61.8	27	9,727	+43.1	59,269	+3.4
Indiana.....	2,699	2,695	+7.2	2	-71.4	2	4,119	+57.2	19,832	-7.3
Iowa.....	1,745	1,722	-15.2	19	-24.0	4	2,501	+48.0	11,675	+1.5
Kansas.....	553	545	+13.3	7	-12.5	1	916	+20.8	13,757	-1.8
Kentucky.....	1,037	1,014	-4.9	23	+35.3	0	2,117	+1.4	28,229	-7.4
Louisiana.....	716	708	+17.6	5	+150.0	3	1,548	+18.1	14,425	-2.8
Maine.....	165	164	+57.7	1	-----	0	345	+70.8	2,717	-3.2
Maryland.....	432	424	-12.4	8	+100.0	0	794	+49.0	9,102	-8.7
Massachusetts.....	1,030	1,006	-2.4	24	0	0	2,430	+32.9	76,125	-2.0
Michigan.....	2,991	2,922	+11.9	10	-60.0	59	3,213	+15.7	20,271	-6
Minnesota.....	2,907	2,880	+7.4	25	+212.5	2	3,099	+52.9	22,482	-1.0
Mississippi.....	52	38	+52.0	12	+500.0	2	1,332	+16.5	22,148	-3.3
Missouri.....	1,508	1,503	+6	5	-16.7	0	2,825	+21.5	34,392	-11.2
Montana.....	187	167	+9.2	13	+30.0	7	416	+50.7	5,519	+9
Nebraska.....	681	673	-2.5	8	-11.1	0	1,280	+30.2	7,619	-2.5
Nevada.....	88	84	-4.5	4	+33.3	0	140	+26.1	791	+5.5
New Hampshire.....	264	260	+9.7	4	-20.0	0	514	+71.9	4,243	-5.9
New Jersey.....	2,862	2,852	+5.0	8	+33.3	2	3,398	+30.9	38,721	-1.8
New Mexico.....	173	161	-40.1	11	0	1	338	-10.6	5,458	+1.7
New York.....	8,326	8,110	-13.8	211	+201.4	5	7,546	+6.5	71,196	-1.8
North Carolina.....	3,389	3,367	+48.3	22	+4.8	0	2,363	+11.7	26,940	+2
North Dakota.....	452	442	+13.9	9	-10.0	1	676	+34.4	5,868	-2.3
Ohio.....	7,469	7,398	-9.8	52	+8.3	19	7,180	+59.1	58,459	-3.6
Oklahoma.....	1,191	1,164	-32.0	27	0	0	1,423	-3.3	19,352	-7.9
Oregon.....	582	571	+18.5	11	-15.4	0	1,186	+30.5	8,789	+6.9
Pennsylvania.....	3,920	3,473	-7	245	+47.6	202	8,173	+45.7	167,902	+5
Rhode Island.....	444	436	-11.6	0	-----	8	1,000	+57.7	10,783	+2.7
South Carolina.....	486	473	-26.8	7	0	6	441	-10.4	15,727	-7.5
South Dakota.....	321	294	+1.4	25	+108.3	2	995	+62.3	7,989	+10.2
Tennessee.....	1,027	1,026	+8.9	1	-80.0	0	1,315	-6.6	35,503	-1.7
Texas.....	6,161	6,119	-4.1	40	+48.1	2	6,714	-12.4	49,782	-2.9
Utah.....	880	876	+192.0	4	-33.3	0	891	+95.8	3,189	+25.0
Vermont.....	343	342	+11.0	1	-50.0	0	233	-7.2	697	-43.1
Virginia.....	1,706	1,690	-21.7	12	+140.0	4	1,096	+19.1	14,873	-8.5
Washington.....	816	780	+47.2	7	-36.4	29	1,575	+28.5	11,075	-5.1
West Virginia.....	942	919	-16.4	17	+21.4	6	1,035	+14.0	14,120	-14.0
Wisconsin.....	2,971	2,935	-3.8	17	+112.5	19	5,656	+69.7	26,759	+7.6
Wyoming.....	259	245	+10.9	9	-35.7	5	330	+56.4	1,274	-8.5
Dist. of Columbia.....	1,584	1,560	+8.3	24	+26.3	0	1,242	+34.6	8,308	-4.9

¹ Includes only security-wage placements on work-relief projects.

TABLE 4.—Veterans' Activities of United States Employment Service, June 1937

State	Placements					New applica- tions		Active file		
	Total	Private		Public		Relief ¹	Num- ber	Percent of change from May	June 30, 1937	Percent of change from May 31
		Num- ber	Percent of change from May	Num- ber	Percent of change from May					
United States.....	21,957	10,942	-14.2	10,638	-2.4	377	9,417	-0.6	271,786	-7.9
Alabama.....	326	166	-29.4	160	+11.1	0	79	-47.0	2,847	-19.9
Arizona.....	134	44	-27.9	90	-1.1	0	66	-26.7	952	-24.1
Arkansas.....	223	96	+14.3	124	+34.8	3	98	-17.6	2,488	-14.8
California.....	2,230	1,381	-18.7	839	-13.2	10	1,309	+2.5	14,226	-9.4
Colorado.....	311	144	-34.8	164	-6	3	155	+26.0	2,962	-2.1
Connecticut.....	226	152	-17.8	74	+4.2	0	123	-16.9	2,833	-12.6
Delaware.....	71	43	-4.4	28	-31.7	0	5	-54.5	446	-1.5
Florida.....	348	185	-20.6	162	-6	1	202	+1.0	4,518	-6.4
Georgia.....	353	164	+1.2	189	-12.1	0	101	-27.3	3,400	-20.5
Idaho.....	239	108	+36.7	131	+5.6	0	91	+30.0	1,020	-8.8
Illinois.....	1,522	1,067	-18.0	453	-2.6	2	693	+4.5	17,480	-6.6
Indiana.....	307	201	-26.6	106	-5.4	0	282	-11.3	7,051	-11.3
Iowa.....	928	476	-1.0	440	+13.4	12	204	+18.6	3,466	-12.3
Kansas.....	427	249	+49.1	178	-28.2	0	99	-18.2	4,023	-7.0
Kentucky.....	382	145	-26.4	236	-16.0	1	137	-6.8	6,006	-4.4
Louisiana.....	158	64	+4.9	94	+6.8	0	154	+6.2	3,811	-7.2
Maine.....	164	27	+68.7	137	+21.2	0	42	0	1,449	-17.2
Maryland.....	233	105	-28.1	128	+68.4	0	112	+34.9	3,077	-4.4
Massachusetts.....	218	92	-16.4	126	-13.1	0	214	-13.0	18,637	-1.8
Michigan.....	641	398	-21.7	209	-11.8	34	387	-16.1	6,989	-15.5
Minnesota.....	701	373	+5.4	322	-6.1	6	242	+24.1	8,117	-12.0
Mississippi.....	191	7	+75.0	182	+22.1	2	93	-7.0	2,247	-10.4
Missouri.....	601	218	-14.2	379	+2.4	4	253	-1.2	10,606	-11.2
Montana.....	307	59	-11.9	198	-16.8	50	69	-8.0	1,390	-8.0
Nebraska.....	336	79	-12.2	257	+36.7	0	114	+31.0	2,368	-11.4
Nevada.....	126	31	-8.8	95	+23.4	0	50	+4.2	214	-18.6
New Hampshire.....	69	31	+20.2	38	-33.3	0	43	+34.4	1,091	-12.9
New Jersey.....	248	191	-22.4	56	-1.8	1	239	+24.5	10,530	-4.9
New Mexico.....	106	38	-19.1	68	-9.3	0	19	-13.6	2,000	+7.3
New York.....	1,135	608	-18.1	524	-12.7	3	315	-6.5	19,745	-4.2
North Carolina.....	394	165	-17.9	229	-10.5	0	164	-5.2	2,747	-7.6
North Dakota.....	200	55	+10.0	142	-4.7	3	63	+6.8	1,446	-7.8
Ohio.....	1,532	993	-15.7	523	+1.8	16	455	+11.0	14,800	-9.8
Oklahoma.....	318	132	-45.2	184	-4.7	2	123	-16.9	5,049	-11.8
Oregon.....	419	185	+10.8	233	-3.7	1	192	0	3,833	-8.4
Pennsylvania.....	1,093	363	-9.3	587	-12.4	143	520	+20.6	37,742	-2.1
Rhode Island.....	76	46	+76.9	30	+7.1	0	39	-23.5	1,822	-13.6
South Carolina.....	217	62	-15.1	155	+2.0	0	62	-31.1	1,806	-7.6
South Dakota.....	268	72	-1.4	192	+2.1	4	29	-40.8	2,464	-4.0
Tennessee.....	393	83	-45.4	309	+25.6	1	172	-25.2	6,374	-4.7
Texas.....	1,421	827	-7.3	577	+4.9	17	482	-9.6	7,675	-10.9
Utah.....	178	62	-41.5	115	+47.4	1	42	+55.6	1,061	-14.2
Vermont.....	64	23	-37.8	41	+13.9	0	8	-27.3	100	-56.5
Virginia.....	374	152	+7.0	221	-13.0	1	156	+3.3	1,954	-9.9
Washington.....	487	178	-9.6	286	-17.6	23	154	-25.6	4,002	-23.0
West Virginia.....	212	96	-25.6	116	-4.9	0	86	-21.8	3,923	-11.8
Wisconsin.....	674	292	-21.9	364	+13.4	18	475	+42.6	6,655	-5.7
Wyoming.....	166	40	+25.0	111	+2.8	15	52	-7.1	322	-23.0
Dist. of Columbia.....	210	174	+10.1	36	-42.9	0	153	+2.7	2,022	-7.5

¹ Includes only security-wage placements on work-relief projects.

Trend of Employment and Pay Rolls

SUMMARY OF REPORTS FOR JUNE 1937

ON THE BASIS of reports supplied by approximately 135,000 establishments, it is estimated that 56,000 fewer workers were employed in June than in May and weekly pay rolls decreased \$2,000,000 in the combined manufacturing and nonmanufacturing industries surveyed monthly by the United States Bureau of Labor Statistics.

Between June 1936 and June 1937, however, it is estimated that nearly 1,400,000 workers have been returned to employment in these industries and that weekly pay rolls have increased more than \$67,000,000.

Class I railroads again reported an increase in employment over the month interval. According to a preliminary tabulation by the Interstate Commerce Commission, they had 1,158,918 employees (exclusive of executives, officials, and staff assistants) on their pay rolls in June as compared with 1,141,361 in May.

Employment in the executive, judicial, legislative, and military services of the Federal Government in June was somewhat higher than in the preceding month. An increase was reported in the number of workers employed on construction projects financed from regular governmental appropriations, due largely to a seasonal increase in employment on road projects. Employment gains were also reported on Federal projects under The Works Program. Employment declined from May to June on projects operated by the Works Progress Administration, Public Works Administration projects, and construction projects financed by the Reconstruction Finance Corporation. Employment on emergency conservation work decreased substantially as is usual at the end of an enrollment period.

Industrial and Business Employment

Factory employment declined 1.2 percent from May to June and pay rolls fell 2.2 percent, labor disputes in the blast furnace, steel works, and rolling mill industry being partially responsible. These percentages indicate that there were 102,000 fewer workers on factory pay rolls in June than in May and that their weekly wage disbursements had been reduced nearly \$4,600,000. Despite the adverse influence of strikes, the June 1937 factory figures compare favorably

with the June figures of other years as employment decreases between May and June have been shown in 9 of the preceding 18 years for which data are available and pay-roll decreases have been reported in 10 of these years.

With the exception of the three immediately preceding months, the June factory employment and pay-roll indexes (101.1 and 102.9, respectively) stand above the level recorded in any month since November 1929. A comparison with June of last year shows a gain of 12.2 percent or nearly 920,000 workers over the year interval and an increase of 26.9 percent or \$44,300,000 in weekly wages.

Of the 89 manufacturing industries surveyed 39 reported gains in employment over the month interval and a like number showed increases in pay rolls. A tabulation of wage-rate increases covering reporting establishments showed 195,000 factory wage earners receiving wage-rate increases between May 15 and June 15, the cumulative total since October of last year amounting to nearly 4,250,000. This number includes some duplication of workers, as more than one wage-rate increase has been reported by some firms over this interval.

Among the industries showing seasonal gains in employment were radios and phonographs (30.4 percent), canning and preserving (23.2 percent), ice cream (10.4 percent), beverages (8.2 percent), butter (7.3 percent), and beet sugar (5.7 percent). Employment in plants manufacturing explosives rose 4.5 percent and gains ranging from 2.0 to 4.1 percent were reported in the aluminum, tin-can and other tinware, structural metalwork, machine tool, and sawmill industries. Gains of 1.9 percent each were shown in the rayon and allied products, and furniture industries; gains of 1.8 percent each were reported in the cash register and stove industries; and increases of 1.7 percent each were shown in the electrical machinery and cement industries. Employment in petroleum refining rose 1.6 percent; in baking, 1.5 percent; in smelting and refining, 1.5 percent; in locomotives, 1.2 percent; and in fur-felt hats, 1.2 percent. Among the remaining industries reporting increases were steam railroad repair shops (0.9 percent), foundries and machine shops (0.8 percent), chemicals (0.7 percent), silk and rayon goods (0.5 percent), and paper and pulp (0.3 percent).

The seasonal decrease of 27.7 percent in employment in the fertilizer industry was the most pronounced decline shown. Other industries reporting seasonal recessions were women's clothing (10.0 percent), millinery (8.5 percent), cottonseed oil-cake-meal (8.0 percent), dyeing and finishing textiles (7.6 percent), men's furnishings (3.8 percent), and confectionery (3.3 percent). Largely because of labor disputes, employment in the bolt, nut, washer and rivet industry decreased 12.7 percent, and in the blast furnace, steel works, and rolling mill industry, 12.9 percent. The latter figure is partially estimated and will be revised when June employment reports which could not be supplied for a number of steel plants affected by the strikes, have been received.

Rubber boot and shoe and men's clothing plants reported declines of 5.0 and 4.4 percent, respectively, in number of workers; and sugar refining, shipbuilding, cutlery, knit goods, and rubber goods other than footwear and tire establishments reported decreases ranging from 4.3 to 3.0 percent. Industries of major importance in which smaller decreases in employment were shown were cotton goods (2.4 percent), woolen and worsted goods (2.2 percent), book and job printing (1.9 percent), automobiles (1.5 percent), and boots and shoes (1.4 percent).

The combined 16 nonmanufacturing industries showed a net gain of approximately 46,000 workers over the month interval. The largest gain in number of employees (22,000) was in retail-trade establishments, increases being general in the various groups of retail businesses surveyed. The important group of general merchandising establishments (department, variety, and general merchandising stores and mail-order houses) showed a gain of 0.7 percent in employment over the month interval. Coal-wood-ice dealers reported a seasonal expansion of 2.4 percent in employment, and drug stores showed a gain of 1.9 percent. Other lines of retail trade reporting employment gains from May to June were jewelry (1.1 percent), automotive (1.0 percent), apparel (0.7 percent), and food (0.3 percent). Furniture stores reported a decline of 0.1 percent and dealers in lumber and building materials also reported 0.1 percent fewer employees.

Seasonal gains in the laundry and dyeing and cleaning industries resulted in an increase of more than 9,000 workers and the net gain in the 5 industries comprising the mining group exceeded 5,000. Employment in the private building-construction industry showed a further gain in June (3.1 percent) and electric light and power and manufactured gas companies reported a gain of 1.8 percent. The decreases in the nonmanufacturing industries for which declines were reported over the month interval were 3.0 percent in brokerage, 0.8 percent in year-round hotels, and 0.6 percent in wholesale trade. Twenty of the 33 lines of wholesale trade surveyed reported employment gains among them being automotive products; food products; general merchandise; groceries and food specialties; hardware; and machinery, equipment, and supplies. The farm-products group and the assemblers and country buyers group showed sharp seasonal recessions (18.5 percent and 19.1 percent, respectively).

The increases in employment in a number of the nonmanufacturing industries raised the June levels to the maximum registered in recent years. Employment in the metalliferous mining industry reached the highest level since August 1930. In the electric light and power and manufactured gas industry, employment was above that of any month since July 1931. Employment in dyeing and cleaning establishments was higher than that of any month over the preceding 6 years for

which records are available. In the general merchandising group of retail stores (department, variety, and general merchandising stores and mail-order houses) the June 1937 level was above the June levels of 1929 and succeeding years.

Employment on class I railroads increased again, according to preliminary reports of the Interstate Commerce Commission. The number of railroad workers exclusive of executives, officials, and staff assistants was 1,141,361 in May as against 1,158,918 in June, a gain of 17,557 or 1.5 percent. Pay-roll figures were not available at the time this report was prepared. In May, however, total wage disbursements to this group of workers were \$160,285,126 in comparison with \$158,087,384 in April, a gain of 1.4 percent over the month interval.

Hours and earnings.—Based on data supplied by cooperating manufacturing establishments for full- and part-time workers combined, average hours worked per week by factory wage earners were 39.2 in June and 39.8 in May, a decrease of 1.4 percent over the month interval. Hourly earnings, however, were 0.5 percent higher in June than in May, the average earnings in June being 65.3 cents as against 64.9 in May. These changes were reflected in the average weekly wages, which were \$26.00 in June or 1.0 percent lower than in the preceding month.

Of the 14 nonmanufacturing industries for which man-hour data are available 10 reported increases in average hours worked per week and a like number showed higher average hourly earnings. Average weekly earnings were higher for 13 of the 16 nonmanufacturing industries surveyed.

Table 1 presents a summary of employment and pay-roll indexes and average weekly earnings in June 1937 for all manufacturing industries combined, for selected nonmanufacturing industries and for class I railroads, with percentage changes over the month and year intervals except in the few industries for which certain items cannot be computed. The indexes of employment and pay rolls for the manufacturing industries are based on the 3-year average 1923-25 as 100, and for the nonmanufacturing industries on the 12-month average of 1929 as 100. The information for the manufacturing industries, mining, laundries, dyeing and cleaning, and building construction covers wage earners only, and for crude-petroleum producing both wage earners and clerical field force. The figures for public utilities, trade, hotels, brokerage, and insurance cover all employees, including executives.

TABLE 1.—*Employment, Pay Rolls, and Earnings in all Manufacturing Industries Combined and in Nonmanufacturing Industries, June 1937 (Preliminary Figures)*

Industry	Employment			Pay roll			Average weekly earnings		
	Index, June 1937	Percentage change from—		Index, June 1937	Percentage change from—		Average in June 1937	Percentage change from—	
		May 1937	June 1936		May 1937	June 1936		May 1937	June 1936
All manufacturing industries combined ¹	(1923-25 = 100) 101.1	-1.2	+12.2	(1923-25 = 100) 102.9	-2.2	+26.9	\$26.00	-1.0	+13.1
Class I steam railroads ²	65.6	+1.5	+8.8	(³)	(³)	(³)	(³)	(³)	(³)
Coal mining:	(1929 = 100)			(1929 = 100)					
Anthracite	51.1	+2	-2	50.9	+14.7	+21.4	28.99	+14.5	+21.6
Bituminous	77.9	+2	+2.9	71.2	+5.0	+15.7	23.19	+4.9	+12.5
Metalliferous mining	78.9	+9	+27.5	77.2	-3.1	+60.1	31.18	-3.9	+25.6
Quarrying and nonmetallic mining	55.4	+9	+3.6	52.6	+2.5	+19.6	23.84	+1.6	+15.4
Crude-petroleum producing	78.9	+2.9	+7.0	69.9	+3.2	+18.7	33.50	+4	+10.9
Public utilities:									
Telephone and telegraph	78.5	+1.0	+9.0	88.6	-1.0	+14.5	29.95	-2.0	+5.1
Electric light and power and manufactured gas	96.0	+1.8	+6.2	100.1	+2.6	+13.6	33.57	+8	+6.9
Electric-railroad and motor-bus operation and maintenance	73.3	+1	+2.2	71.1	+1.5	+6.5	31.85	+1.4	+4.2
Trade:									
Wholesale	90.3	-6	+6.7	76.3	+2	+11.6	30.56	+8	+4.5
Retail	90.5	+6	+5.8	74.4	+1.1	+12.0	22.06	+5	+5.8
General merchandising	102.9	+7	+6.7	92.5	+1.1	+13.7	18.74	+4	+6.6
Other than general merchandising	87.2	+6	+5.5	70.6	+1.1	+11.4	24.73	+5	+5.6
Hotels (year-round) ⁴	86.9	-8	+3.6	74.0	+5	+11.0	14.83	+1.4	+7.2
Laundries	93.5	+3.6	+7.2	85.5	+5.0	+12.7	17.18	+1.4	+5.1
Dyeing and cleaning	92.1	+3.9	+5.3	79.2	+7.2	+14.4	21.32	+3.1	+8.6
Brokerage	(³)	-3.0	+3.9	(³)	-3.2	+8.1	39.28	-2	+4.1
Insurance	(³)	+4	+1.5	(³)	+1.1	+5.9	39.78	+7	+4.4
Building construction	(³)	+3.1	+10.5	(³)	+3.5	+26.6	31.25	+3	+14.6

¹ Revised indexes; adjusted to 1933 Census of Manufactures.

² Preliminary; source—Interstate Commerce Commission.

³ Not available.

⁴ Cash payments only; the additional value of board, room, and tips cannot be computed.

Public Employment

There were more than 204,000 workers engaged on construction projects financed from Public Works Administration funds in June, a decrease of 2,000 compared with the 206,000 workers employed in May. The increase in employment on projects financed from funds provided by the Emergency Relief Appropriation Acts of 1935 and 1936 was offset by decreases in employment on Federal and non-Federal projects financed from funds provided by the National Industrial Recovery Act. Pay-roll disbursements for June on all projects financed by the Public Works Administration totaled \$16,431,000.

During the month more than 177,000 employees were working on construction projects financed from regular governmental appropriations, an increase of 17,000 compared with the number employed in May. Increases in employment occurred on all types of projects with the exception of reclamation, river, harbor, and flood control, streets

and roads, and miscellaneous projects. Total pay rolls on all projects financed from regular governmental appropriations amounted to \$16,980,000.

Employment on projects financed by the Reconstruction Finance Corporation decreased 16.2 percent in June to 5,000. Construction activity was curtailed on all types of projects. Pay-roll disbursements totaled \$691,000. This was a decrease of \$99,000 compared with the preceding month.

The number of wage earners employed on projects financed by The Works Program during June was 2,716,000. Compared with the number working in May this was a decrease of 286,000. Of the total, 285,000 were working on Federal projects, 2,020,000 on projects operated by the Works Progress Administration, and 411,000 on work projects of the National Youth Administration and Student-Aid. Disbursements for pay rolls totaled \$126,556,000.

Small increases in employment occurred in the executive, legislative, judicial, and military services of the Federal Government. Employment in the executive service showed a slight increase (0.2 percent) in June. Compared with a year ago the June level of employment increased 2.4 percent. Of the 842,000 employees in the executive service, 116,000 were working in the District of Columbia and 726,000 were employed outside the District. Pronounced increases in employment in the executive service occurred in the Post Office Department, the War Department, and in the Department of Agriculture. Appreciable decreases occurred in the Puerto Rican Reconstruction Administration, the Treasury Department, and in the Resettlement Administration.

In emergency conservation work (Civilian Conservation Corps) employment decreased in June. Employment for all groups of workers totaled 324,000, a decrease of 25,000 compared with May. The decrease was due almost entirely to the usual decline in the number of enrolled workers at the end of the 3-month enrollment period. Virtually no change occurred in the number of reserve officers and educational advisers. An increase, however, was reported in the number of supervisory and technical employees. Pay rolls for the month for all groups of workers were \$16,086,000, a decrease of \$633,000.

In June 168,000 workers were employed on the construction of new roads and the maintenance and repair of old roads financed from State funds. This was a decrease of 9,000 compared with May. Although there was a gain in the number of employees engaged on new construction, the drop in employment on maintenance work was sufficiently large to cause a decrease in total employment on State roads. Of the total number employed 19,000 were working on new construction and 149,000 on maintenance work.

Pay-roll disbursements, totaling in excess of \$11,069,000 during the month, were \$219,000 greater than in the preceding month.

A summary of Federal employment and pay-roll statistics for May and June is given in table 2.

TABLE 2.—Summary of Federal Employment and Pay Rolls, June 1937 ¹
(Preliminary Figures)

Class	Employment		Per-centage change	Pay roll		Per-centage change
	June 1937	May 1937		June 1937	May 1937	
Federal services:						
Executive ²	842,003	840,521	+0.2	\$127,306,469	\$127,610,269	-0.2
Judicial	2,040	2,010	+1.5	500,801	496,663	+8.8
Legislative	5,133	5,117	+0.3	1,203,582	1,197,996	+5.5
Military	319,223	317,520	+0.5	23,135,605	23,813,274	-2.9
Construction projects:						
Financed by P. W. A. ³	204,098	206,019	-0.9	16,430,649	15,850,554	+3.7
Financed by R. F. C. ⁴	4,898	5,847	-16.2	690,822	790,018	-12.6
Financed by regular governmental appropriations	177,265	160,346	+10.6	16,980,060	15,278,529	+11.1
Federal projects under The Works Program	284,893	266,686	+6.8	14,794,640	14,154,856	+4.5
Projects operated by W. P. A.	2,020,273	2,133,340	-5.3	107,046,653	112,262,434	-4.6
National Youth Administration:						
Works Projects	170,472	184,173	-7.4	2,862,654	3,093,750	-7.5
Student-Aid	240,460	418,362	-42.5	1,852,006	3,591,961	-48.4
Relief work: Emergency Conservation Work ⁷	323,626	348,905	-7.3	16,085,832	16,719,019	-3.8

¹ Includes data on projects financed wholly or partially from Federal funds.

² Includes employees of Columbia Institution for the Deaf and Howard University.

³ Includes 247 employees by transfer previously reported as separations, not actual additions for June.

⁴ Revised.

⁵ Data covering P. W. A. projects financed from E. R. A. A. 1935 and 1936 funds are included, these data are not shown under The Works Program. In-

cludes 141,708 wage earners and \$10,960,950 pay roll for June; 139,561 wage earners and \$10,339,137 pay roll for May covering P. W. A. projects financed from E. R. A. A. 1935 and 1936 funds.

⁶ Includes 59 employees and pay-roll disbursements of \$3,325 for June and 80 employees and pay-roll disbursements of \$4,420 for May on projects financed by the RFC Mortgage Co.

⁷ Includes 43,246 employees and pay roll of \$5,603,833 for June and 41,930 employees and pay roll of \$5,370,053 for May included in executive service.

DETAILED REPORTS FOR INDUSTRIAL AND BUSINESS EMPLOYMENT, MAY 1937 ¹

THIS ARTICLE presents the detailed figures on volume of employment, as compiled by the Bureau of Labor Statistics, for the month of May 1937. The tabular data are the same as those published in the Employment and Pay Rolls pamphlet for May, except for certain minor revisions and corrections.

Monthly reports on employment and pay rolls in industrial and business industries are now available for the following groups: 89 manufacturing industries; 16 nonmanufacturing industries, including building construction; and class I steam railroads. The reports for the first two of these groups—manufacturing and nonmanufacturing—are based on sample surveys by the Bureau of Labor Statistics, and in virtually all industries the samples are large enough to be entirely representative. The figures on class I steam railroads are compiled by the Interstate Commerce Commission and are presented in the foregoing summary.

Employment, Pay Rolls, Hours, and Earnings in May 1937

The indexes of employment and pay rolls, average hours worked per week, average hourly earnings, and average weekly earnings in manufacturing and nonmanufacturing industries in May 1937 are shown in table 1. Percentage changes from April 1937 and May 1936 are also given.

¹ Detailed reports for Public Employment appear in the June 1937 pamphlet on Equipment and Pay Rolls.

TABLE 1.—Employment, Pay Rolls, Hours, and Earnings in Manufacturing and Nonmanufacturing Industries, May 1937

MANUFACTURING

[Indexes are based on 3-year average 1923-25=100 and are adjusted to 1933 Census of Manufactures]

Industry	Employment		Pay rolls		Average weekly earnings ¹		Average hours worked per week ¹		Average hourly earnings	
	Index May 1937	Percentage change from— April 1937 May 1936	Index May 1937	Percentage change from— April 1937 May 1936	May 1937	Percentage change from— April 1937 May 1936	May 1937	Percentage change from— April 1937 May 1936	May 1937	Percentage change from— April 1937 May 1936
All manufacturing industries	102.3	+0.2	+13.9	105.2	+30.2	+0.1	+14.2	39.8	-1.4	+1.3
Durable goods.....	99.9	+1.3	+18.9	107.5	+36.9	-3	+15.1	41.3	-1.6	-4
Nondurable goods.....	104.8	-1.0	+9.2	102.3	+22.1	+4	+11.8	38.1	-1.4	+2.9
<i>Durable goods</i>										
Iron and steel and their products, not including machinery.....	110.1	+1.1	+22.2	124.7	+50.2	-9	+23.0	41.4	-2.6	-1.7
Blast furnaces, steel works, and rolling mills...	122.0	+1.4	+23.9	145.6	+56.7	-1.4	+26.6	41.3	-3.1	-3.8
Bolts, nuts, washers, and rivets.....	93.8	+7	+26.6	113.4	+46.2	-2.9	+15.6	42.2	-2.5	-9
Cast-iron pipe.....	71.5	+8	+15.3	62.4	+40.2	+6	+21.5	41.0	-1.5	+5.4
Cutlery (not including silver and plated cutlery) and edge tools.....	89.0	-9	+17.2	86.9	+36.2	+1.7	+16.2	42.6	-1	+6.8
Forgings, iron and steel.....	74.0	+ ⁽¹⁾	+26.8	74.1	+49.9	-1.9	+18.3	43.3	-2.5	+5.6
Hardware.....	98.5	-1.3	+27.2	117.4	+49.1	+4.2	+17.2	41.5	-2.0	+1.0
Plumbers' supplies.....	95.9	+1.4	+13.0	77.1	+23.1	-1.8	+9.0	40.4	-3.4	-7
Steam and hot-water heating apparatus and steam fittings.....	81.7	- ⁽¹⁾	+26.7	82.5	+55.1	-2.4	+22.3	43.0	-2.5	+4.6
Stoves.....	116.9	+1.5	+17.0	106.7	+31.0	-1.2	+11.8	41.6	-2.1	+2.8
Structural and ornamental metalwork.....	76.9	+1.5	+18.0	78.5	+39.4	-1.4	+18.3	41.6	-2.6	+5
Tin cans and other tinware.....	104.9	+2.6	+8.3	111.7	+17.8	+5	+8.6	40.6	+2	+6
Tools (not including edge tools, machine tools, files, and saws).....	103.3	+1.1	+31.9	113.9	+45.5	-2.4	+10.4	42.8	-5.3	-1.0
Wirework.....	182.8	-1.7	+21.1	189.1	+35.4	+4.5	+13.0	40.1	+1.2	-5.5
<i>Cents</i>										
					64.9				71.3	
					57.9				57.9	
<i>Percentage change from—</i>										

Machinery, not including transportation equipment.	126.1	+1.4	+23.1	134.9	+7	+42.4	29.54	-9	+15.7	42.4	-1.3	+1.6	69.4	+7	+14.1
Agricultural implements.	139.7	+1.6	+8.3	183.9	+2.1	+29.1	29.35	+5	+19.6	40.8	-1.8	-	72.3	+2.4	+20.1
Cash registers, adding machines, and calculating machines.	133.5	+1.7	+11.8	149.0	+7.0	+31.4	34.45	-9	+17.1	42.9	-1.3	+1.2	80.9	+3	+15.3
Electrical machinery, apparatus, and supplies.	117.8	+2.8	+34.7	123.5	+2.0	+52.2	28.85	-8	+13.1	40.9	-2.5	+1.7	71.1	+1.7	+13.3
Engines, turbines, tractors, and water wheels.	148.8	+3.1	+17.5	156.5	+2.6	+40.4	32.87	-5	+20.7	40.8	-1.1	+3.0	80.8	+7	+17.5
Foundry and machine-shop products.	111.7	+1.9	+25.4	119.4	+1.8	+44.7	29.77	-1.1	+15.5	43.9	-1.4	+2.0	67.7	+4	+13.5
Machine tools.	149.6	+2.0	+31.3	161.6	+1.6	+51.2	33.24	-4	+15.2	47.5	+1.2	+5.7	70.1	-1.6	+8.9
Radios and phonographs.	139.9	-11.7	-21.4	108.5	-14.4	-20.0	20.41	-3.1	+1.7	37.8	+2.6	+2.1	54.3	-5.1	+2.2
Textile machinery and parts.	153.7	+5	+25.1	95.3	-6	+47.4	29.26	-1.1	+17.9	44.8	-1.2	+6.8	65.4	+1	+10.6
Typewriters and parts.	185.7	-4	+34.6	155.2	-1.0	+55.6	26.96	-6	+15.6	42.7	-6	+7.2	63.2	+	+11.2
Transportation equipment.	198.3	+2.3	+20.7	134.1	+4.3	+32.0	33.19	+1.9	+9.3	38.5	+6	-5.4	96.5	+1.5	+16.0
Aircraft.	823.2	+1.2	+41.4	739.4	+1	+50.5	28.20	+1.1	+3.3	44.4	-1.8	+7	64.8	+3.1	+2.0
Automobiles.	140.0	+2.8	+19.4	143.8	+5.7	+29.4	34.06	+2.9	+8.4	38.1	+1.2	-8.1	89.6	+1.6	+18.3
Cars, electric- and steam-railroad.	77.7	+3.5	+40.8	89.9	+9	+74.1	28.32	+2.4	+24.6	40.1	-3.0	+10.3	70.6	+5	+11.9
Locomotives.	58.8	+2.4	+80.7	47.3	+4.9	+128.9	31.50	+2.4	+26.7	44.4	-1.4	+15.7	70.9	+1.0	+9.4
Shipbuilding.	103.7	-2.1	+5.7	118.7	-3.2	+16.1	30.77	-1.2	+9.8	37.5	-1.0	+1.8	81.0	-7	+7.3
Railroad repair shops.	63.6	+5	+9.7	67.1	-4	+12.8	30.47	-9	+2.8	44.4	-8	+2.9	68.9	-	+2
Electric railroad.	63.4	+5	+1.7	66.4	-1.6	+6.0	29.80	-1.1	+4.2	44.0	-1.4	-1.9	66.2	+3	+5.2
Steam railroad.	63.6	+5	+10.2	67.4	-3	+13.6	30.58	-8	+3.0	44.4	-8	+3.2	69.2	+1	-1
Nonferrous metals and their products.	115.5	0	-22.0	113.1	-1.0	+43.2	26.35	-1.0	+17.4	40.8	-2.7	+1.6	64.1	+1.7	+15.5
Aluminum manufactures.	125.8	+1.1	+21.5	134.0	+3.1	+46.9	26.98	+2.0	+20.8	41.2	-3.1	+3.0	65.6	+5.3	+17.9
Brass, bronze, and copper products.	125.7	-1.5	+26.1	126.5	-4.7	+50.7	28.43	-3.3	+19.4	41.1	-4.3	+4	69.1	+1.1	+18.9
Clocks and watches and time-recording devices.	123.4	+3	+19.4	122.3	+2	+36.4	22.76	-2	+14.2	41.3	-1.7	+6.6	55.1	+9	+8.2
Jewelry.	88.6	+1.2	+22.6	69.1	+1.7	+36.9	23.67	+5	+11.7	38.5	-7	+4.5	61.0	+2	+5.3
Lighting equipment.	99.7	-1.6	+32.1	101.6	-5.1	+48.6	25.66	-3.6	+12.4	39.6	-4.4	-2.9	63.0	+8	+16.2
Silverware and plated ware.	74.4	+	+17.1	69.7	+1.7	+46.1	25.94	+1.7	+24.6	41.4	-7	+20.1	63.1	+2.2	+2.9
Smelting and refining—copper, lead, and zinc.	87.5	+3.4	+14.6	54.8	+3.6	+38.4	28.67	+2	+20.8	42.2	-4	+1.1	68.0	+5	+19.5
Stamped and enameled ware.	162.8	+2	+19.0	166.0	+1.2	+35.4	23.83	+9	+13.7	40.3	-2.3	-2.5	59.4	+3.5	+17.6
Lumber and allied products.	71.6	+1.4	+11.7	68.7	-1.1	+25.4	21.41	-1.4	+12.2	42.1	-2.8	+1.6	51.6	+1.5	+9.5
Furniture.	87.4	+6	+21.1	76.7	-2.3	+36.7	20.63	-2.8	+12.9	41.3	-4.2	-2.4	50.3	+1.5	+11.7
Lumber.															
Millwork.	57.3	-7	+19.7	54.9	-1.2	+30.6	22.26	-5	+9.1	43.7	-3.1	+5	51.0	+2.5	+8.3
Sawmills.	54.7	+2.3	+5.3	52.9	+1.8	+17.3	21.74	-5	+11.4	42.2	-2.0	+9	52.5	+1.3	+9.3
Stone, clay, and glass products.	74.4	+1.9	+13.9	72.0	+1.3	+29.5	24.59	-6	+13.7	39.9	-1.9	+1.1	82.0	+8	+11.8
Brick, tile, and terra cotta.	55.0	+3.2	+17.8	49.1	-1	+33.3	21.91	-3.2	+3.3	42.0	-3.3	-2.3	52.1	-5	+15.6
Cement.	68.5	+2.4	+11.8	71.4	+4.3	+31.2	25.97	+1.8	+17.2	39.4	-3	+1.8	65.9	+2.2	+16.4
Glass.	112.3	+1.2	+12.3	118.9	+1.1	+29.9	25.53	-2.2	+14.6	37.8	-2.5	+1.9	67.8	+1	+12.5
Marble, granite, slate, and other products.	44.9	+4.2	+12.5	41.3	+6.5	+10.3	26.84	+2.2	-2.0	40.7	+1.7	-1.9	66.1	+5	-1.4
Pottery.	81.7	-5	+11.2	75.0	+4.0	+36.7	24.44	+4.5	+23.0	41.2	-1.0	+7.7	60.0	+4.5	+9.2
Nonendurable goods															
Textiles and their products.	107.3	-2.4	+10.2	96.2	-4.0	+23.0	18.02	-1.6	+11.7	36.0	-2.4	+2.6	49.4	+8	+8.1
Fabrics.	102.2	-1.4	+13.1	98.0	-2.3	+30.3	18.09	-8	+15.3	37.3	-2.0	+3.3	48.2	+1.0	+10.8
Carpets and rugs.	102.2	-7	+23.5	100.7	-	+51.7	23.24	-	+22.8	37.2	-2.4	+7.1	62.7	+2.4	+13.2
Cotton goods.	103.6	-1	+19.0	106.5	-1.0	+41.7	15.95	-9	+19.0	37.9	-1.5	+2.8	42.0	+8	+15.8
Cotton small wares.	98.2	-9.0	+3.9	95.7	-11.7	+13.8	18.14	-2.9	+7.6	38.2	-3.7	+2.3	48.1	+9	+7.5
Dyeing and finishing textiles.	118.8	-3.5	+3.7	106.2	-7.3	+15.2	21.48	-3.9	+11.1	37.8	-4.3	+3.1	56.2	+1	+7.7
	82.0	-5.9	-4.5	69.3	+5	-1.2	22.65	+11.7	+3.6	31.4	+13.1	-1.8	71.3	+1.7	+5.3

See footnotes at end of table.

TABLE 1.—Employment, Pay Rolls, Hours, and Earnings in Manufacturing and Nonmanufacturing Industries, May 1937—Continued

MANUFACTURING—Continued

[Indexes are based on 3-year average 1923-1925=100 and are adjusted to 1933 Census of Manufactures]

Industry	Employment		Pay rolls		Average weekly earnings		Average hours worked per week		Average hourly earnings	
	Index May 1937	Percentage change from— April 1937	Index May 1937	Percentage change from— April 1937	May 1937	Percentage change from— April 1937	May 1937	Percentage change from— April 1937	May 1937	Percentage change from— April 1937
<i>Nondurable goods—Continued</i>										
Textiles and their products—Continued.										
Carpets and rugs—Continued.										
Knit goods.....	121.7	-1.4	125.1	-1.9	\$17.83	-0.6	36.8	-2.4	49.2	+1.7
Silk and rayon goods.....	78.7	-4.2	68.4	-4.1	16.79	+1.1	37.0	-2.2	45.2	+1.5
Woolen and worsted goods.....	87.9	-1.2	81.4	-2.2	21.36	-1.1	36.9	-2.0	58.0	+9
Wearing apparel.....	116.5	-4.4	88.9	-7.1	17.84	-2.9	33.3	-3.5	51.7	+4.3
Clothing, men's.....	111.5	-2.8	89.9	-6.1	19.15	-3.3	34.1	-2.6	55.5	+3.1
Clothing, women's.....	152.6	-5.7	105.9	-6.0	18.82	-3	31.9	-3.0	54.2	+1.5
Corsets and allied garments.....	91.4	-1.1	91.8	-4.3	16.56	-3.2	35.2	-5.2	46.6	+2.5
Men's furnishings.....	141.9	-3.3	106.0	-8.4	13.32	-5.2	35.5	-6.7	34.0	+1.8
Millinery.....	56.0	-8.3	38.6	-20.6	20.08	-13.5				
Shirts and collars.....	120.2	-6.1	101.6	-11.3	12.65	-6.6	33.4	-5.8	38.8	+1.5
Leather and its manufactures.....	95.1	-3.3	81.6	-7.0	19.98	-3.8	37.4	-3.9	54.6	+1.3
Boots and shoes.....	95.3	-4.0	74.1	-9.2	18.76	-5.4	36.8	-4.3	52.5	+1.1
Leather.....	99.1	-9	110.0	-1.2	24.64	-3	39.7	-2.2	62.4	+1.7
Food and kindred products.....	107.9	+3.2	111.6	+3.1	25.05	+2.9	41.8	+1.8	59.6	+1.5
Baking.....	134.6	+1.4	130.3	+5.5	24.98	+4.1	43.2	+2.3	58.0	+1.6
Beverages.....	207.4	+5.4	236.9	+7.6	33.74	+2.1	41.4	+4	82.4	+1.6
Butter.....	89.0	+6.1	71.3	+7.7	22.23	+1.5				
Canning and preserving.....	99.6	-10.1	108.5	-4.2	17.45	+6.6	38.5	+3.8	46.7	-4
Confectionery.....	71.2	-4.1	69.2	-1.8	17.66	+2.3	38.5	-3	46.1	+2.8
Flour.....	73.8	-8	73.4	-1.4	25.35	+2.3	44.3	+1.5	56.6	+2.2
Ice cream.....	82.0	+18.5	73.8	+17.7	28.28	-7	48.9	+1.5	57.9	-1.3
Slaughtering and meat packing.....	89.3	+1.1	99.0	+3	27.80	-8	40.6	-4.6	68.5	-1
Sugar, beet.....	46.7	+6.0	51.1	+1.6	25.11	-4.1	38.6	-4.6	67.1	+11.1
Sugar refining, cane.....	78.3	-6.4	71.6	-11.1	25.44	-5.0	40.4	-8.3	62.4	+3.7

To tobacco manufactures.....	59.9	-5	-2	53.6	+10.5	16.49	+2.0	+10.8	37.1	+1.9	+2.4	+2.1	+8.4
Cheering and smoking tobacco and snuff.....	55.9	-3	+1.2	66.4	+2.5	17.76	+1.4	+10.1	36.3	+1.1	+1.7	+1.3	+8.5
Cigars and cigarettes.....	60.3	-5	-4	52.0	+2.6	16.22	+3.1	+11.1	37.2	+1.0	+2.5	+2.2	+8.4
Paper and printing.....	107.7	+5	+8.2	105.9	+1.0	16.8	+1.5	+7.8	40.3	+1.2	+3.0	+1.8	+4.5
Boxes, paper.....	103.6	-3	+13.2	106.2	-1.6	22.90	-1.3	+8.6	41.1	-2.6	+3.0	+1.4	+5.9
Paper and pulp.....	120.2	+9	+9.8	121.8	+1.8	25.44	+1.9	+15.2	42.8	-1.3	+3.1	+2.2	+11.4
Printing and publishing.....													
Book and job.....	97.3	+4	+9.5	94.6	+1.3	30.70	+1.8	+7.0	40.3	-5	+4.9	+2.0	+2.5
Newspapers and periodicals.....	106.1	+5	+3.0	104.7	+1.0	37.00	+1.5	+4.5	37.1	-1.3	+1.9	+1.4	+3.8
Chemicals and allied products, and petroleum refining.....													
Other than petroleum refining.....	124.5	-1.7	+11.4	136.7	+1.2	28.26	+1.9	+16.4	39.8	-1.7	+1.0	+3.7	+16.6
Chemicals.....	124.6	-2.4	+12.6	136.2	0	26.19	+2.4	+16.4	41.2	-1.6	+1.6	+4.6	+15.4
Other than petroleum refining.....	137.5	+1.4	+17.3	152.5	+1.3	30.86	-1.1	+16.9	40.7	-1.2	-6	+1.1	+17.4
Cottonseed—oil, cake, and meal.....	47.8	-18.6	+8.3	42.3	-15.9	31.2	+3.4	+21.0	49.2	-9.9	+13.4	+4.7	+8.9
Druggists' preparations.....	108.3	-2.9	+7.5	118.0	-1.5	23.85	+1.5	+7.4	39.3	-1.7	+4.9	+2.0	+3.2
Explosives.....	90.7	-1.9	+16.6	103.2	-4.1	34.6	-2.2	+15.4	40.9	-3.5	+3.7	+1.4	+11.6
Fertilizers.....	104.6	-31.0	+8.8	116.2	-23.0	24.9	+11.6	+10.2	43.7	+3.6	+6.2	+15.9	+9.2
Paints and varnishes.....	140.2	+1.4	+9.5	145.0	+2.1	20.7	+7	+22.0	39.6	-4	+4	+6	+9.9
Rayon and allied products.....	384.0	+1.6	+14.4	382.0	+4.7	39.8	+3.1	+12.5	39.2	-8	+2.7	+3.5	+18.8
Soap.....	103.3	-4.0	+7.8	113.8	-2.2	21.2	+1.8	+17.9	35.6	-1.3	-1.7	+2.8	+12.6
Petroleum refining.....	124.1	+1.7	+6.5	138.3	+1.0	25.7	-7	+8.4	36.9	-2.4	+3	+4.3	+20.8
Rubber products.....	103.6	+7.1	+16.5	109.2	+8.9	26.4	+1.6	+8.4	39.2	+3	+3	+6.8	+11.0
Rubber boots and shoes.....	76.3	+4	+7.9	72.7	+6.5	34.1	+6.1	+24.4	39.2	+3	+5.2	+17.3	+10.7
Rubber goods, other than boots, shoes, tires, and inner tubes.....	146.6	-4	+18.9	153.5	+1.8	39.0	+2.2	+16.9	41.2	-1	+8.9	+6	+17.3
Rubber tires and inner tubes.....	93.7	+15.1	+17.4	102.7	+13.5	31.91	-1.4	+1.5	33.2	-3.9	-8.0	+2.8	+9.8

See footnotes at end of table.

TABLE 1.—Employment, Pay Rolls, Hours, and Earnings in Manufacturing and Nonmanufacturing Industries, May 1937—Continued

NONMANUFACTURING

[Indexes are based on 12-month average 1929=100]

Industry	Employment		Pay rolls		Average weekly earnings		Average hours worked per week		Average hourly earnings	
	Index May 1937	Percentage change from— April 1937	Index May 1937	Percentage change from— April 1937	May 1937	Percentage change from— April 1937	May 1937	Percentage change from— April 1937	May 1937	Percentage change from— April 1937
Coal mining:										
Anthracite.....	51.0	-5.5	44.4	-30.5	\$25.32	-26.4	27.8	-33.5	91.2	+10.4
Bituminous.....	77.8	+7.1	67.8	+24.7	22.20	+16.4	24.9	+15.0	90.1	+2.3
Metallic mining.....	78.2	+2.7	79.6	+3.6	32.28	+9.9	44.6	+7.0	72.6	+1.0
Quarrying and nonmetallic mining.....	54.9	+3.5	51.4	+6.9	23.44	+3.3	43.9	+1.4	53.0	+1.1
Crude-petroleum producing.....	76.7	+1.2	67.7	+5.4	33.17	-7.7	38.7	-2.4	80.2	+1.5
Public utilities:										
Telephone and telegraph.....	77.7	+1.5	89.5	+3.7	30.86	+2.1	39.3	+2.2	81.1	+1.9
Electric light and power and manufactured gas.....	94.4	+1.6	97.6	+2.4	33.34	+8.8	40.0	-1.4	82.8	+2.0
Electric-railroad and motorbus operation and maintenance.....	73.3	+5	70.1	+1.0	31.44	+5	46.3	+2	66.9	+4
Trade:										
Wholesale.....	90.8	-1.2	76.1	+9	30.29	+2.2	43.1	-1	70.2	+2.5
Retail.....	89.9	+1.2	73.5	+2.3	21.97	+1.1	43.4	-3	55.3	+1.4
General merchandising.....	102.1	+2.6	91.5	+2.7	18.73	+1.1	39.8	-2.1	50.4	+7
Other than general merchandising.....	86.7	+7	69.8	+2.2	24.59	+1.4	44.5	-2	56.9	+1.7
Hotels (year-round).....	87.7	-8	73.6	-1.2	14.59	-5	47.8	-5	30.4	+3
Laundries.....	90.3	+2.0	81.4	+3.6	16.94	+1.6	43.4	+4	38.8	+1.3
Dyeing and cleaning.....	88.6	+4.4	73.9	+7.4	20.61	+2.9	44.6	+1.6	46.8	+8
Brokerage.....	(9)	-1.4	(9)	-1.1	39.42	+3	(9)	(9)	(9)	(9)
Insurance.....	(9)	+5	(9)	+1.0	39.50	+5.1	(9)	(9)	(9)	(9)
Building construction.....	(9)	+7.7	(9)	+13.2	31.10	+5.1	34.3	+2.9	90.5	+2.3

¹ Average weekly earnings are computed from figures furnished by all reporting establishments. Average hours and average hourly earnings are computed from data supplied by a smaller number of establishments as not all reporting firms furnish man-hours. Percentage changes over year are computed from indexes. Percentage changes over month in average weekly earnings for the manufacturing groups, for all manufacturing industries combined, and for retail trade are also computed from indexes.

² Less than 1/10 of 1 percent.

³ Percentage change in average hours for silk and rayon goods from April 1936 to April 1937 revised to 6.4.

⁴ April employment index for rubber goods, other than boots, shoes, tires, and inner tubes revised to 147.1.

⁵ Cash payments only; the additional value of board, room, and tips cannot be computed.

⁶ Not available.

Indexes of Employment and Pay Rolls, January 1936 to May 1937

Indexes of employment and pay rolls are given in tables 2 and 3 for all manufacturing industries combined, for the durable- and non-durable-goods groups of manufacturing industries separately, and for 13 nonmanufacturing industries including 2 subgroups under retail trade, by months from January 1936 to May 1937, inclusive. The accompanying chart indicates the trend of factory employment and pay rolls from January 1919 to May 1937.

TABLE 2.—*Indexes of Employment and Pay Rolls in all Manufacturing Industries Combined and in the Durable- and Nondurable-Goods Groups, January 1936 to May 1937*¹

[Adjusted to 1933 Census of Manufactures—3-year average 1923-25=100]

Month	Manufacturing											
	Total				Durable goods ²				Nondurable goods ²			
	Employment		Pay rolls		Employment		Pay rolls		Employment		Pay rolls	
	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937
January.....	86.8	96.5	73.8	90.7	78.7	90.4	66.9	86.6	95.4	103.0	82.5	96.0
February.....	86.9	99.0	73.7	95.8	78.6	93.2	66.6	92.5	95.8	105.2	82.7	99.9
March.....	87.9	101.1	77.6	101.1	80.2	96.4	71.8	100.0	96.1	106.1	84.9	102.6
April.....	89.1	102.1	79.3	104.9	82.3	98.6	76.0	106.4	96.3	105.9	83.5	102.9
May.....	89.8	102.3	80.8	105.2	84.0	99.9	78.5	107.5	96.0	104.8	83.8	102.3
June.....	90.1	-----	81.1	-----	84.7	-----	79.0	-----	95.9	-----	83.9	-----
July.....	91.2	-----	80.2	-----	84.6	-----	75.9	-----	98.2	-----	85.6	-----
August.....	93.5	-----	83.5	-----	84.7	-----	77.0	-----	102.8	-----	91.8	-----
September.....	95.5	-----	83.6	-----	85.7	-----	77.2	-----	105.9	-----	91.6	-----
October.....	96.7	-----	89.0	-----	89.2	-----	85.3	-----	104.7	-----	93.7	-----
November.....	96.9	-----	90.7	-----	91.0	-----	88.9	-----	103.3	-----	92.9	-----
December.....	98.1	-----	95.2	-----	92.7	-----	93.4	-----	104.0	-----	97.5	-----
Average.....	91.9	-----	82.4	-----	84.7	-----	78.0	-----	99.5	-----	87.9	-----

¹ Comparable indexes for earlier years will be found in the April 1937 issue of the Monthly Labor Review.

² Includes the following groups of manufacturing industries: Iron and steel; machinery; transportation equipment; railroad repair shops; nonferrous metals; lumber and allied products; and stone, clay, and glass products.

³ Includes the following groups of manufacturing industries: Textiles and their products, leather and its manufactures, food and kindred products, tobacco manufactures, paper and printing, chemicals and allied products, products of petroleum and coal, rubber products, and a number of miscellaneous industries not included in other groups.

The indexes of factory employment and pay rolls are computed from returns supplied by representative establishments in 89 manufacturing industries and cover only wage earners. The base used in computing these indexes is the 3-year average 1923-25 as 100. In May 1937 reports were received from 25,294 manufacturing establishments employing 4,976,611 workers whose weekly earnings were \$131,314,127. The employment reports received from these estab-

lishments cover more than 55 percent of the total wage earners in all manufacturing industries of the country and more than 65 percent of the wage earners in the 89 industries included in the monthly survey of the Bureau of Labor Statistics.

The indexes of nonmanufacturing industries are also computed from data supplied by reporting establishments, but the base is the 12-month average for 1929 as 100. Figures for mining, laundries, dyeing and cleaning, and building construction cover wage earners only, but the figures for public utilities, trade, hotels, brokerage, and insurance relate to all employees, including executives. For crude-petroleum producing they cover wage earners and clerical field force.

Data for both manufacturing and nonmanufacturing industries are based on reports of the number of employees and amount of pay rolls for the pay period ending nearest the 15th of the month.

TABLE 3.—*Indexes of Employment and Pay Rolls in Selected Nonmanufacturing Industries, January 1936 to May 1937*¹

[12-month average 1929=100]

Month	Anthracite mining				Bituminous-coal mining				Metalliferous mining				Quarrying and non-metallic mining			
	Employment		Pay rolls		Employment		Pay rolls		Employment		Pay rolls		Employment		Pay rolls	
	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937
January.....	59.1	54.1	54.4	42.7	79.8	84.6	70.6	79.9	54.2	66.8	41.7	58.4	39.4	45.7	25.5	34.6
February.....	61.2	52.7	76.7	41.0	80.2	84.8	78.4	82.4	55.5	69.6	42.8	63.4	36.9	46.7	23.9	37.8
March.....	52.5	48.9	42.6	37.8	80.4	85.9	70.2	88.4	55.9	73.1	45.1	70.6	42.2	49.1	30.9	41.3
April.....	49.8	54.0	28.6	63.9	77.5	72.6	62.6	54.4	57.5	76.2	45.5	76.9	48.4	53.1	36.1	48.1
May.....	54.9	51.0	56.3	44.4	76.2	77.8	62.2	67.8	60.8	78.2	47.7	79.6	52.0	54.9	42.1	51.4
June.....	51.2	-----	42.0	-----	75.7	-----	61.5	-----	61.9	-----	48.2	-----	53.5	-----	44.0	-----
July.....	48.4	-----	37.2	-----	75.5	-----	62.6	-----	61.3	-----	46.1	-----	54.4	-----	43.9	-----
August.....	41.1	-----	31.4	-----	76.9	-----	65.4	-----	61.6	-----	48.2	-----	55.3	-----	46.2	-----
September.....	47.6	-----	34.9	-----	78.2	-----	71.0	-----	63.1	-----	50.0	-----	54.9	-----	44.8	-----
October.....	49.9	-----	48.5	-----	81.1	-----	79.2	-----	64.2	-----	53.7	-----	54.6	-----	46.2	-----
November.....	51.5	-----	40.3	-----	82.3	-----	80.7	-----	62.9	-----	54.6	-----	52.6	-----	43.5	-----
December.....	54.8	-----	55.4	-----	83.9	-----	85.0	-----	64.4	-----	57.7	-----	49.4	-----	39.4	-----
Average.....	51.8	-----	45.7	-----	79.0	-----	70.8	-----	60.3	-----	48.4	-----	49.5	-----	38.9	-----

¹ Comparable indexes for earlier years for all of these industries, except year-round hotels, will be found in the February 1935 and subsequent issues of the Monthly Labor Review. Comparable indexes for year-round hotels will be found in the September 1935 issue of the Monthly Labor Review.

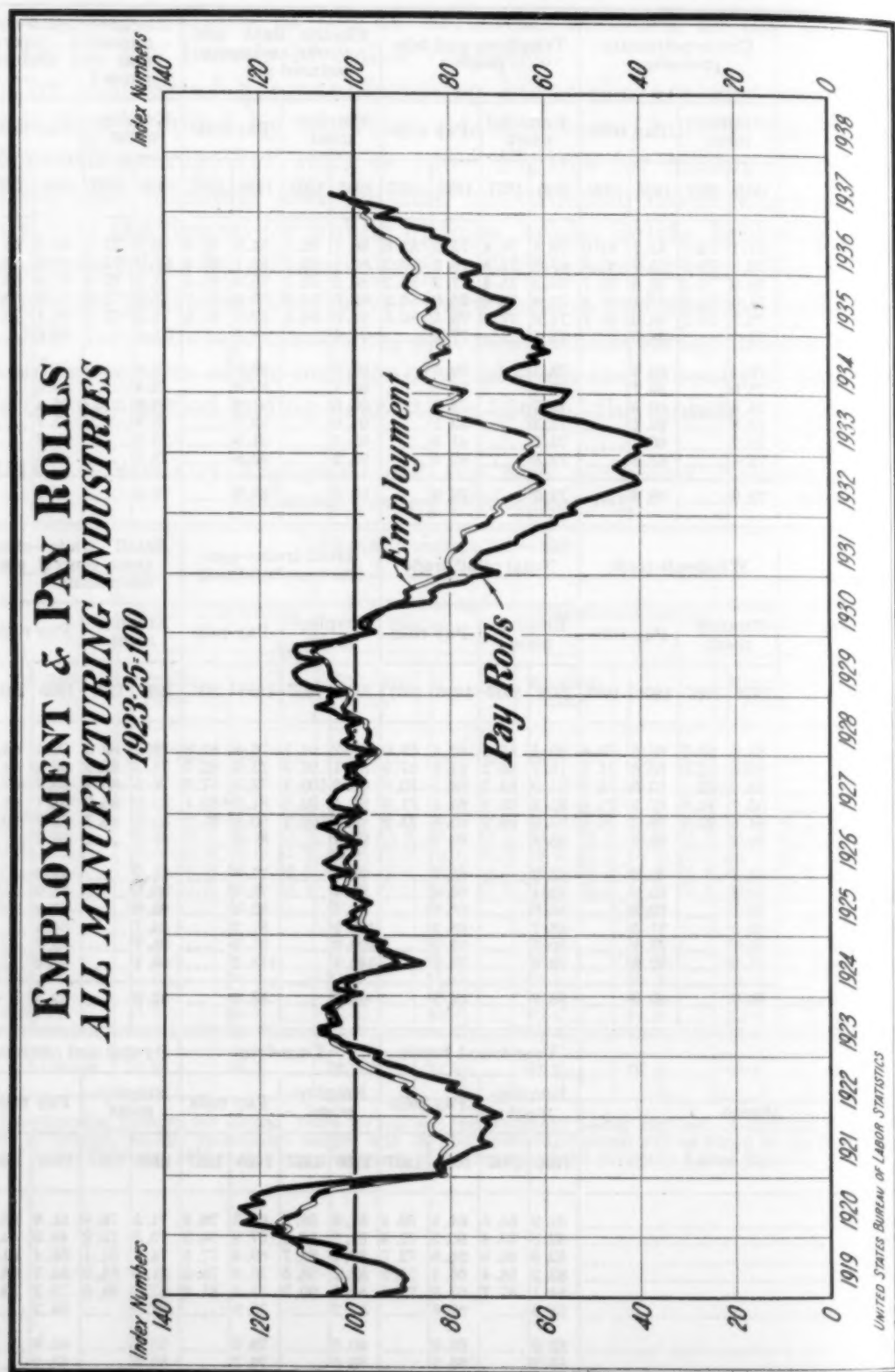
TABLE 3.—Indexes of Employment and Pay Rolls in Selected Nonmanufacturing Industries, January 1936 to May 1937—Continued

Month	Crude-petroleum producing				Telephone and telegraph				Electric light and power, and manufactured gas				Electric-railroad and motorbus operation and maintenance ¹			
	Employment		Pay rolls		Employment		Pay rolls		Employment		Pay rolls		Employment		Pay rolls	
	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937
January.....	71.1	72.7	55.7	61.0	70.1	74.4	75.0	83.6	86.1	92.1	84.8	92.3	70.7	72.5	65.0	68.0
February.....	70.8	73.5	55.7	63.8	69.9	74.8	76.2	82.2	86.1	92.0	84.7	93.3	71.7	72.5	68.3	68.7
March.....	70.9	74.2	56.0	63.7	70.2	75.4	77.2	87.2	86.8	92.2	85.9	94.5	71.2	72.6	67.8	69.2
April.....	71.3	75.8	57.1	67.4	70.8	76.6	76.0	86.3	88.0	92.9	86.2	95.2	71.3	72.9	65.9	69.4
May.....	72.7	76.7	58.0	67.7	71.6	77.7	78.5	89.5	89.0	94.4	87.0	97.6	71.5	73.3	66.1	70.1
June.....	73.7	—	58.9	—	72.1	—	77.4	—	90.4	—	88.1	—	71.7	—	66.8	—
July.....	75.4	—	60.4	—	73.1	—	79.9	—	91.7	—	89.8	—	72.4	—	66.5	—
August.....	75.0	—	59.7	—	73.5	—	81.2	—	93.1	—	89.8	—	72.4	—	66.5	—
September.....	74.5	—	60.4	—	73.7	—	78.8	—	93.5	—	91.4	—	72.8	—	66.4	—
October.....	73.6	—	59.6	—	73.8	—	83.1	—	94.0	—	92.7	—	73.1	—	67.7	—
November.....	73.2	—	60.1	—	73.7	—	81.6	—	93.5	—	91.8	—	73.0	—	69.7	—
December.....	72.4	—	61.3	—	73.6	—	82.4	—	93.2	—	93.8	—	72.5	—	69.3	—
Average.....	72.9	—	58.6	—	72.2	—	78.9	—	90.5	—	88.8	—	72.0	—	67.2	—

Month	Wholesale trade				Total retail trade				Retail trade—general merchandising				Retail trade—other than general merchandising			
	Employment		Pay rolls		Employment		Pay rolls		Employment		Pay rolls		Employment		Pay rolls	
	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937
January.....	85.6	90.7	66.6	72.6	80.4	85.4	62.1	68.0	88.2	95.1	76.4	83.8	78.4	82.9	59.1	64.7
February.....	85.0	92.0	66.6	74.1	79.7	85.2	61.6	67.9	85.1	93.9	73.9	82.9	78.3	82.9	59.1	64.8
March.....	85.6	92.1	69.0	75.0	81.9	88.5	63.5	70.5	90.9	100.3	77.3	87.6	79.5	85.4	60.7	67.0
April.....	85.7	91.9	67.9	75.4	85.2	88.8	65.3	71.9	97.4	99.6	81.0	89.1	82.0	86.0	62.1	68.3
May.....	84.6	90.8	68.2	76.1	85.0	89.9	65.8	73.5	95.5	102.1	80.8	91.5	82.3	86.7	62.7	69.8
June.....	84.6	—	68.4	—	85.5	—	66.4	—	96.4	—	81.3	—	82.6	—	63.3	—
July.....	85.4	—	69.0	—	83.2	—	65.1	—	90.7	—	77.3	—	81.2	—	62.6	—
August.....	86.3	—	69.7	—	82.4	—	64.4	—	89.4	—	76.4	—	80.5	—	61.9	—
September.....	88.0	—	70.5	—	86.6	—	66.6	—	98.5	—	82.8	—	83.5	—	63.3	—
October.....	89.0	—	71.5	—	88.7	—	68.3	—	103.9	—	87.2	—	84.7	—	64.4	—
November.....	89.7	—	73.1	—	90.1	—	70.1	—	109.3	—	91.4	—	85.1	—	65.7	—
December.....	91.0	—	72.8	—	90.6	—	75.9	—	143.4	—	116.2	—	88.1	—	67.6	—
Average.....	86.7	—	69.4	—	85.7	—	66.3	—	99.1	—	83.5	—	82.2	—	62.7	—

Month	Year-round hotels				Laundries				Dyeing and cleaning			
	Employment		Pay rolls		Employment		Pay rolls		Employment		Pay rolls	
	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937
January.....	81.9	85.5	64.9	70.4	81.5	88.5	68.3	76.4	71.5	76.8	51.6	55.6
February.....	82.8	86.4	66.5	72.5	81.2	88.6	67.8	76.3	70.3	76.2	49.0	54.6
March.....	82.8	86.9	66.0	72.7	82.1	88.7	69.9	77.5	74.7	81.1	56.4	61.7
April.....	83.2	88.4	66.3	74.5	83.2	88.8	70.9	78.6	81.8	84.9	64.1	68.8
May.....	84.1	87.7	67.0	73.6	85.5	90.3	75.6	81.4	87.3	88.6	72.2	73.9
June.....	83.9	—	66.6	—	87.2	—	75.8	—	87.5	—	69.2	—
July.....	83.3	—	66.0	—	90.5	—	79.0	—	85.5	—	64.8	—
August.....	83.2	—	66.1	—	89.6	—	76.7	—	83.5	—	63.2	—
September.....	84.2	—	67.5	—	89.6	—	76.6	—	86.7	—	66.1	—
October.....	85.4	—	69.6	—	87.6	—	75.3	—	86.5	—	66.7	—
November.....	84.6	—	69.6	—	87.0	—	74.5	—	81.3	—	60.2	—
December.....	84.0	—	69.8	—	87.6	—	76.1	—	77.7	—	57.3	—
Average.....	83.6	—	67.2	—	86.1	—	73.9	—	81.2	—	61.7	—

¹ Not including electric-railroad car building and repair-shop groups, manufacturing industries, table 1. repairing; see transportation equipment and railroad² Revised.



Trend of Industrial and Business Employment, by States

A comparison of employment and pay rolls, by States and geographic divisions, in April and May 1937, is shown in table 4 for all groups combined, and for all manufacturing industries combined, based on data supplied by reporting establishments. The percentage changes shown, unless otherwise noted, are unweighted—that is, the industries included in the manufacturing group and in the grand total have not been weighted according to their relative importance.

The totals for all manufacturing industries combined include figures for miscellaneous manufacturing industries in addition to the 89 manufacturing industries presented in table 1. The totals for all groups combined include all manufacturing industries and each of the nonmanufacturing industries presented in table 1 except building construction.

TABLE 4.—Comparison of Employment and Pay Rolls in Identical Establishments in April and May 1937, by Geographic Divisions and by States

[Figures in italics are not compiled by the Bureau of Labor Statistics, but are taken from reports issued by cooperating State organizations]

Geographic division and State	Total—All groups					Manufacturing				
	Number of establishments	Number on pay roll 1937	Percentage change from April 1937	Amount of pay roll (1 week) May 1937	Percentage change from April 1937	Number of establishments	Number on pay roll 1937	Percentage change from April 1937	Amount of pay roll (1 week) May 1937	Percentage change from April 1937
				<i>Dollars</i>					<i>Dollars</i>	
New England.....	14,067	954,150	-0.3	23,034,255	-0.3	3,511	673,744	-0.9	15,935,098	-1.4
Maine.....	805	59,453	-1.1	1,293,227	+1.1	288	48,749	-3.3	1,032,136	-4.4
New Hampshire.....	613	39,925	-1.9	862,447	-1.3	208	32,917	-2.7	691,577	-2.4
Vermont.....	487	20,012	+1.3	466,558	+1.7	147	13,016	-7.7	304,041	+1.1
Massachusetts.....	18,383	516,522	+1.1	12,491,810	+3.3	1,690	313,290	-1.2	7,393,116	-1.7
Rhode Island.....	1,247	95,235	-1.5	2,289,534	-2.1	420	79,075	-2.0	1,781,007	-2.8
Connecticut.....	2,532	220,003	-0.8	5,630,679	-7.7	758	186,697	+1.1	4,733,221	-6.6
Middle Atlantic.....	35,015	2,308,552	-(²)	63,601,311	-3.3	5,259	1,296,483	-2.2	35,576,490	-1.1
New York.....	23,039	1,049,744	-2.2	29,851,645	+3.3	3,117	471,339	-(²)	13,160,110	-1.1
New Jersey.....	4,197	360,431	+0.8	9,648,932	+1.7	828	267,056	+4.4	7,082,943	+1.3
Pennsylvania.....	7,779	898,377	-1.1	24,100,734	-1.7	2,314	558,088	(³) (²)	15,333,457	-2.2
East North Central.....	21,754	2,443,926	+1.8	70,715,311	+2.5	7,523	1,912,308	+1.6	57,201,311	+2.1
Ohio.....	8,133	681,570	+2.1	19,309,191	+9.9	2,535	515,771	+2.2	15,192,659	+1.1
Indiana.....	2,419	286,970	+2.2	7,991,685	+2.1	889	239,106	+2.1	6,870,542	+1.6
Illinois.....	6,897	653,459	+1.3	17,886,850	+1.0	2,426	462,026	+1.1	12,878,394	+4.4
Michigan.....	3,887	624,056	+2.3	20,234,341	+6.0	948	534,437	+2.0	17,830,112	+6.8
Wisconsin.....	1,018	197,871	-1.1	5,293,264	+1.3	726	160,968	-1.3	4,429,604	-7.7
West North Central.....	11,721	437,328	+1.0	10,678,454	+9.9	2,526	221,975	+4.4	5,402,436	-1.1
Minnesota.....	2,171	91,211	+2.1	2,367,908	+3.6	427	43,904	+3.5	1,120,843	+2.2
Iowa.....	1,751	65,176	+3.0	1,601,724	+3.4	408	39,364	+3.2	1,001,122	+2.7
Missouri.....	3,062	174,305	-0.9	4,157,548	-2.4	872	97,291	-2.4	2,210,786	-5.5
North Dakota.....	537	5,238	+2.8	127,329	+6.0	58	785	+8.4	22,048	+9.7
South Dakota.....	455	7,914	+1.9	207,766	+5.1	41	2,251	+3.3	59,484	+6.4
Nebraska.....	1,572	33,759	+0.8	821,051	+2.5	158	11,672	+1.6	304,294	+1.9
Kansas.....	2,173	59,725	+3.7	1,395,128	+1.6	562	26,708	+1.4	683,859	+1.0
South Atlantic.....	11,909	878,433	-7.7	18,036,588	+1.6	2,786	591,830	-1.2	11,499,397	-1.1
Delaware.....	211	16,763	+1.9	429,556	+1.4	87	12,937	+1.6	329,673	+7.7
Maryland.....	1,679	141,659	+1.2	3,522,981	+4.4	681	100,015	+1.1	2,517,121	+4.4
District of Columbia.....	1,100	41,681	+6.6	1,075,347	+1.3	35	3,582	+2.9	124,990	+3.1
Virginia.....	2,134	109,579	+1.0	2,187,176	+1.2	468	74,203	-3.3	1,487,502	-2.7
West Virginia.....	1,268	158,925	+8.8	4,064,744	+9.9	252	63,682	+1.1	1,769,740	+2.8
North Carolina.....	1,444	163,232	-1.7	2,618,231	-2.5	573	150,466	-1.7	2,373,716	-2.9
South Carolina.....	781	79,704	-1.9	1,239,009	-7.7	212	71,275	-2.2	1,078,600	-1.3
Georgia.....	1,552	121,750	-5.5	2,062,098	-5.5	387	94,613	-1.0	1,470,616	-1.7
Florida.....	1,140	45,240	-11.1	837,446	-6.7	201	21,087	-7.2	347,439	-5.9

See footnotes at end of table.

TABLE 4.—Comparison of Employment and Pay Rolls in Identical Establishments in April and May 1937, by Geographic Divisions and by States—Continued

Geographic division and State	Total—All groups					Manufacturing				
	Number of establishments	Number on pay roll May 1937	Percentage change from April 1937	Amount of pay roll (1 week) May 1937	Percentage change from April 1937	Number of establishments	Number on pay roll May 1937	Percentage change from April 1937	Amount of pay roll (1 week) May 1937	Percentage change from April 1937
				Dollars					Dollars	
East South Central	4, 186	304, 302	+2. 7	5, 820, 714	+2. 7	1, 012	197, 877	-0. 9	3, 705, 432	-0. 9
Kentucky.....	1, 307	87, 588	+4. 1	1, 909, 521	+3. 2	297	39, 829	-1. 4	881, 344	-3. 6
Tennessee.....	1, 321	108, 792	+1. 3	2, 019, 787	+2. 2	384	82, 194	-1. 1	1, 494, 868	+1. 8
Alabama.....	982	91, 260	+4. 0	1, 607, 944	+3. 8	244	66, 288	-1. 8	1, 181, 624	+2. 1
Mississippi.....	576	16, 662	-2. 3	283, 462	-1. 7	87	9, 566	-4. 9	147, 596	-7. 4
West South Central	4, 484	206, 849	+1. 0	4, 742, 520	+2. 1	1, 099	103, 377	+1. 8	2, 238, 553	+1. 3
Arkansas.....	¹⁰ 425	22, 763	+2. 7	429, 406	+3. 5	175	16, 948	+1. 7	299, 141	+1. 6
Louisiana.....	1, 003	49, 301	-1. 4	962, 282	-1. 1	224	26, 675	-1. 8	463, 183	-2. 7
Oklahoma.....	1, 320	45, 732	+2. 0	1, 142, 944	+3. 1	143	12, 925	+2. 6	307, 740	+4. 0
Texas.....	¹¹ 1, 736	89, 053	+1. 6	2, 207, 888	+2. 8	557	46, 829	+1. 8	1, 168, 489	+2. 4
Mountain	4, 238	134, 346	+1. 2	3, 701, 138	+4. 6	559	39, 943	+3. 1	1, 134, 432	+0. 7
Montana.....	674	20, 835	+2. 3	654, 716	+4. 6	84	5, 157	+2. 8	157, 272	+4. 6
Idaho.....	487	10, 826	+5. 9	289, 649	+2. 8	53	3, 309	+9. 5	86, 654	+6. 8
Wyoming.....	324	8, 829	-1. 1	224, 936	-1. 5	39	1, 711	+2. 6	53, 473	+1. 1
Colorado.....	1, 177	43, 990	+1. 1	1, 186, 242	+8. 8	188	17, 499	+2. 8	521, 522	+15. 7
New Mexico.....	312	7, 333	-1. 1	159, 890	-1. 2	31	938	-1. 5	17, 791	+5. 8
Arizona.....	467	18, 733	-2. 3	554, 850	+2. 3	37	3, 207	+4. 2	84, 461	+9. 8
Utah.....	590	20, 616	+2. 0	533, 404	+4. 0	102	7, 108	+1. 5	183, 300	+4. 8
Nevada.....	207	3, 184	+2. 5	97, 451	+2. 1	25	1, 014	+1. 6	29, 959	+1. 6
Pacific	8, 950	445, 713	-1. 8	12, 385, 168	-1. 4	2, 448	261, 676	-2. 0	7, 312, 991	-2. 0
Washington.....	3, 065	102, 350	+1. 1	2, 808, 837	+1. 2	559	58, 592	+1. 6	1, 595, 590	+1. 5
Oregon.....	1, 352	55, 407	+2. 5	1, 418, 558	+1. 2	306	32, 242	+2. 9	792, 842	-2. 2
California.....	¹² 4, 533	287, 956	-2. 1	8, 167, 773	-1. 1	1, 583	170, 842	-4. 1	4, 924, 559	-2. 8

¹ Includes banks and trust companies, construction, municipal, agricultural, and office employment, amusement and recreation, professional services, and trucking and handling.

² Less than 1/10 of 1 percent.

³ Includes laundering and cleaning, and water, light, and power.

⁴ Includes laundries.

⁵ Weighted percentage change.

⁶ Includes automobile, and miscellaneous services,

restaurants, and building and contracting.

⁷ Includes construction but not public works.

⁸ Does not include logging.

⁹ Includes financial institutions, miscellaneous services, and restaurants.

¹⁰ Includes automobile dealers and garages, and sand, gravel, and building stone.

¹¹ Includes business and personal services.

¹² Includes banks, insurance, and office employment.

Industrial and Business Employment and Pay Rolls in Principal Cities

A comparison of May 1937 employment and pay rolls with the April totals in 13 cities of the United States having a population of 500,000 or over is made in table 5. The changes are computed from reports received from identical establishments in both months.

In addition to reports included in the several industrial groups regularly covered in the survey by the Bureau, reports have also been secured from establishments in other industries for inclusion in these city totals. As information concerning employment in building construction is not available for all cities at this time, figures for this industry have not been included in these city totals.

TABLE 5.—Comparison of Employment and Pay Rolls in Identical Establishments in April and May 1937, by Principal Cities

City	Number of establishments	Number on pay roll (May 1937)	Percentage change from April 1937	Amount of pay roll (1 week) (May 1937)	Percentage change from April 1937
New York, N. Y.....	17, 414	724, 751	-0.2	\$20, 088, 124	+0.3
Chicago, Ill.....	4, 515	503, 535	+1.5	14, 570, 356	+1.2
Philadelphia, Pa.....	2, 570	229, 118	-3.9	6, 235, 923	-3.0
Detroit, Mich.....	1, 649	411, 440	+3.6	13, 963, 279	+9.3
Los Angeles, Calif.....	2, 789	162, 090	+5	4, 604, 335	+1.5
Cleveland, Ohio.....	1, 771	149, 172	+1	4, 246, 032	-1.9
St. Louis, Mo.....	1, 558	137, 704	-1.1	3, 439, 046	-3.8
Baltimore, Md.....	1, 244	111, 957	+1.6	2, 898, 541	+2
Boston, Mass.....	3, 881	193, 092	-2	4, 838, 397	-4
Pittsburgh, Pa.....	1, 325	215, 833	+3.5	6, 473, 605	+4.5
San Francisco, Calif.....	1, 631	89, 338	-1.3	2, 642, 956	-9
Buffalo, N. Y.....	909	84, 258	-4	2, 656, 269	+9
Milwaukee, Wis.....	724	89, 694	-5	2, 497, 620	-1.0

UNEMPLOYMENT IN FOREIGN COUNTRIES IN THE SPRING OF 1937

THE decline in unemployment in foreign countries in the spring of 1937 reflected more than a seasonal trend. In fact the falling unemployment reported by official statistics, whether for trade-union members, unemployed registered with public exchanges, or compulsorily insured workers, indicated that labor was gradually being reabsorbed into employment and that the movement back to work, which began in 1936, was being continued. If the various series of unemployment statistics which deal with special categories of labor may be considered typical of general unemployment trends, conditions may be said to have improved materially in most of the industrial countries as well as in Australia and New Zealand.

The percentage of wholly unemployed members of unemployment-insurance societies in Belgium was 13.1 in April 1936, whereas 10.8 percent of the membership was so classed in the same month a year later. In Germany, registered unemployed numbering 1,314,731 in June 1936 had been reduced to 649,000 in June of this year. As a result of the reemployment of labor, shortages were being felt in certain skilled trades. In Great Britain and Northern Ireland registration dropped from 1,702,676 in June 1936 to 1,356,598 a year later. The figures for Australia, Austria, Canada, Czechoslovakia, the Netherlands, and New Zealand show the same trend. Special interest attaches to the reduction in the unemployed in insurance societies of the Netherlands, from 164,957, or 35.3 percent, in May

1936, to 109,922, or 20.5 percent, in the same month of 1937, as no significant improvement was reported during the year 1936.

Poland is the only country for which figures are collected where the number of the unemployed registered had not materially fallen, the figures for May 1936 and May 1937 being 334,822 and 334,527, respectively. However, in June the total dropped below 300,000.

The table following gives statistics of unemployment in foreign countries as shown in official reports, by years from 1930 to 1936, and by months beginning with May 1936 and including the latest month for which figures are available.

Beyond comparisons of the figures in a single series for different periods it is not possible to use the official unemployment statistics to measure volume of unemployment in a single country or to compare conditions in one country with those in another, owing to the fact that the coverage is not always complete. For example, only insured persons may be reported in some instances, or certain classes, such as agricultural labor, may be excluded.

Statement of Unemployment in Foreign Countries

Year and date (end of month)	Australia		Austria	Belgium			
	Trade-unionists unemployed		Compulsory insurance, number of unemployed in receipt of benefit	Unemployment-insurance societies			
				Wholly unemployed		Partially unemployed	
	Number	Percent		Number	Percent	Number	Percent
1931.....	117,866	27.4	253,368	79,186	10.9	121,890	16.9
1932.....	120,454	29.4	309,969	161,468	19.0	175,259	20.7
1933.....	104,035	25.1	328,844	168,033	17.0	170,023	17.2
1934.....	86,865	20.5	287,528	182,855	19.0	166,229	17.2
1935.....	71,823	15.6	261,768	165,469	17.9	118,754	12.8
1936.....	53,992	12.2	259,185	122,256	13.4	91,451	10.0
<i>1936</i>							
May.....			242,227	109,777	12.2	86,424	9.7
June.....	57,001	12.8	230,844	100,838	11.0	99,126	10.9
July.....			221,323	105,558	11.4	84,367	9.1
August.....			217,991	108,404	11.4	92,729	9.8
September.....	52,482	12.0	217,211	105,978	11.3	78,948	8.4
October.....			228,624	101,070	10.8	74,537	8.0
November.....			257,063	112,881	12.1	94,332	10.1
December.....	46,863	10.7	290,452	131,565	14.4	92,619	10.2
<i>1937</i>							
January.....			316,050	131,645	14.5	97,737	10.7
February.....			309,178	124,609	13.7	82,125	9.0
March.....	44,004	9.9	277,126	113,296	12.4	79,711	8.7
April.....			239,280	97,979	10.8	66,163	7.3
May.....			215,176				
June.....			196,067				

Statement of Unemployment in Foreign Countries—Continued

Year and date (end of month)	Canada	Czechoslovakia		Danzig, Free City of	Denmark		
	Percent of trade-unionists unemployed	Number of unemployed on live register	Trade-union insurance funds—unemployed in receipt of benefit		Number of unemployed registered	Trade-union unemployment funds—unemployed	
			Number	Percent		Number	Percent
1931.....	16.8	291,332	102,179	8.3	24,898	53,019	17.9
1932.....	22.6	554,059	184,555	13.5	33,244	99,508	31.7
1933.....	22.3	738,267	247,613	16.9	31,408	97,417	28.8
1934.....	18.2	676,994	245,953	17.4	20,326	81,756	22.2
1935.....	15.4	686,269	235,623	15.9	17,983	76,195	19.8
1936.....	13.3	622,687	208,539	13.1	13,553	78,669	19.3
1936							
May.....	14.8	637,358	208,601	13.2	14,966	52,403	12.9
June.....	13.9	565,799	188,900	11.8	11,890	46,138	11.3
July.....	12.5	508,081	185,259	11.5	8,619	49,605	12.1
August.....	10.8	483,502	180,410	11.2	8,587	50,693	12.3
September.....	10.9	479,268	171,456	10.6	8,306	53,181	12.9
October.....	11.0	441,679	166,575	10.3	9,243	67,674	16.3
November.....	12.7	510,205	176,658	10.8	10,764	83,552	20.0
December.....	14.3	619,143	198,492	12.1	14,933	127,478	30.3
1937							
January.....	14.5	667,486	210,894	12.9	16,797	140,262	33.0
February.....	13.7	677,947	221,464	13.2	16,724	133,795	31.4
March.....	12.9	627,258	210,244	12.4	14,909	122,687	28.6
April.....	11.1	503,632	176,348	10.3	8,776	74,793	17.5
May.....	9.5	384,386	-----	-----	6,526	61,868	14.5

Year and date (end of month)	Estonia	Finland	France	Germany	Great Britain
	Number unemployed remaining on live register	Number of unemployed registered	Number of unemployed in receipt of benefit	Number of unemployed registered	Number of persons registered with employment exchanges
1931.....	3,632	11,522	56,112	4,573,218	2,668,000
1932.....	7,121	17,581	273,412	5,579,858	2,757,000
1933.....	8,210	17,139	276,033	4,733,014	2,520,616
1934.....	2,970	10,011	345,033	2,718,309	2,159,231
1935.....	1,779	7,163	426,931	¹ 2,151,039	2,036,422
1936.....	1,276	4,796	432,120	¹ 1,592,630	1,754,975
1936					
May.....	582	2,795	422,036	1,491,235	1,705,042
June.....	365	1,877	419,887	1,314,731	1,702,676
July.....	352	2,129	425,353	1,169,860	1,652,072
August.....	476	2,431	413,115	1,098,498	1,613,940
September.....	684	3,086	407,733	1,035,237	1,624,339
October.....	1,285	4,594	406,595	1,075,588	1,611,810
November.....	2,102	5,348	407,831	1,197,140	1,623,602
December.....	1,988	4,398	410,785	1,478,862	1,628,719
1937					
January.....	2,388	6,805	426,072	1,853,460	1,689,223
February.....	2,064	5,383	410,219	1,610,947	1,627,845
March.....	1,801	4,482	386,254	1,245,353	1,601,201
April.....	1,191	3,554	368,381	960,833	1,454,443
May.....	638	3,126	345,503	776,321	1,451,330
June.....	486	-----	321,725	² 649,000	1,356,598

¹ Includes the Saar.² Preliminary figure.

Statement of Unemployment in Foreign Countries—Continued

Year and date (end of month)	Great Britain and Northern Ireland				Hungary		
	Compulsory insurance				Employment ex- changes, applica- tions for work	Trade-unionists unemployed	
	Wholly unem- ployed		Temporary stop- pages			Christian (Buda- pest)	Social Demo- cratic
	Number	Percent	Number	Percent			
1931.....	2,129,359	16.7	587,494	4.6	52,305	977	27,635
1932.....	2,272,590	17.6	573,805	4.5	66,235	1,026	29,772
1933.....	2,110,090	16.4	456,678	3.5	60,595	1,085	26,716
1934.....	1,801,913	13.9	368,906	2.9	52,157	996	22,291
1935.....	1,714,844	13.2	312,958	2.3	52,048	967	18,315
1936.....	1,497,587	11.3	251,379	1.9	52,114	800	15,637
1936							
May.....	1,457,097	11.2	229,823	1.8	52,932	795	16,718
June.....	1,401,665	10.7	305,875	2.4	47,738	655	15,771
July.....	1,357,843	10.4	302,271	2.3	46,713	645	14,651
August.....	1,362,033	10.4	249,906	1.9	48,221	747	13,690
September.....	1,384,090	10.6	236,118	1.8	50,166	710	12,876
October.....	1,417,391	10.6	196,370	1.5	50,655	699	12,838
November.....	1,429,736	10.7	191,585	1.5	50,371	841	13,815
December.....	1,424,451	10.7	197,722	1.5	50,863	923	15,044
1937							
January.....	1,489,092	11.2	187,874	1.4	54,407	969	15,640
February.....	1,460,026	10.9	164,739	1.3	56,192	1,012	16,148
March.....	1,406,530	10.5	169,740	1.3	56,782	1,011	15,878
April.....	1,305,280	9.8	130,788	1.0	53,865	943	14,984
May.....	1,245,589	9.3	210,401	1.6	50,273	936	13,637

Year and date (end of month)	Irish Free State	Italy	Japan		Latvia	Netherlands	
	Compul- sory in- surance— number unem- ployed	Number of unem- ployed registered wholly unem- ployed	Official estimates un- employed		Number unem- ployed remaining on live register	Unemployment insurance so- cieties—unem- ployed	
			Number	Percent		Number	Percent
1931.....	25,230	734,454	422,755	6.1	8,709	82,800	18.1
1932.....	62,817	1,006,442	495,681	6.8	14,587	153,500	29.5
1933.....	72,255	1,018,955	408,710	5.6	8,156	163,000	31.0
1934.....	103,671	963,677	372,941	5.0	4,972	160,400	32.1
1935.....	¹ 119,498	.....	356,103	4.6	4,825	173,673	36.3
1936.....	99,834	.....	.....	.....	3,851	168,668	36.2
1936							
May.....	109,185	.....	352,501	4.5	1,840	164,957	35.3
June.....	70,274	.....	344,927	4.4	1,074	162,198	34.8
July.....	68,959	.....	337,998	4.3	1,223	163,125	35.1
August.....	67,045	.....	333,634	4.2	1,128	160,252	34.5
September.....	68,278	.....	330,290	4.2	1,283	156,869	34.3
October.....	71,743	.....	327,578	4.1	2,015	150,761	33.0
November.....	⁴ 110,859	.....	322,948	4.1	4,025	152,568	33.4
December.....	105,078	.....	322,969	4.1	5,613	158,749	34.7
1937							
January.....	100,177	.....	333,210	4.2	6,358	180,413	.....
February.....	91,680	.....	.....	.....	6,178	148,620	.....
March.....	93,426	.....	.....	.....	6,110	136,575	.....
April.....	92,363	.....	.....	.....	3,290	123,168	.....
May.....	88,480	.....	.....	.....	² 2,127	109,922	20.5
June.....	64,011	.....	.....	.....	.....	.....	.....

¹ Preliminary figure.² Incomplete figures.⁴ Special employment period.

Statement of Unemployment in Foreign Countries—Continued

Year and date (end of month)	New Zealand	Norway		Poland	Rumania
	Number unemployed registered by employment exchanges ¹	Trade-unionists (10 unions) unemployed		Number unemployed registered with employment offices	Number unemployed remaining on live register
		Number	Percent		
1931.....	41,430	-----	22.3	27,479	35,851
1932.....	51,549	14,790	30.8	* 32,705	38,899
1933.....	46,971	16,588	33.4	* 35,591	29,060
1934.....	39,235	15,963	30.7	35,121	16,871
1935.....	38,234	14,783	25.3	36,103	13,852
1936.....	36,890	13,267	18.8	32,643	13,549
<i>1936</i>					
May.....	35,270	10,858	15.7	30,923	12,923
June.....	39,038	9,021	12.8	26,139	9,291
July.....	42,939	9,013	12.5	22,145	7,628
August.....	45,045	9,647	13.2	23,477	7,496
September.....	44,263	10,535	14.2	28,122	8,852
October.....	41,908	12,635	16.8	31,332	9,549
November.....	39,056	14,330	18.8	35,119	11,526
December.....	35,286	16,632	21.7	36,260	16,224
<i>1937</i>					
January.....	31,416	18,045	23.2	35,435	18,778
February.....	28,941	18,163	23.1	34,440	17,187
March.....	27,907	18,457	23.2	32,951	14,923
April.....	27,953	17,561	21.8	31,824	-----
May.....	28,302	-----	-----	26,298	334,527
June.....	22,028	-----	-----	22,028	294,334

Year and date (end of month)	Sweden		Switzerland				Yugo- slavia
	Trade-unionists unemployed		Unemployment funds				Number of unem- ployed regis- tered
	Number	Percent •	Wholly unem- ployed		Partially unem- ployed		
			Number	Percent	Number	Percent	
1931.....	64,815	17.2	.....	5.9	.....	12.1	10,018
1932.....	89,922	22.8	.....	9.1	.....	12.2	14,761
1933.....	97,316	23.7	.....	10.8	.....	8.5	15,997
1934.....	80,216	18.9	.....	9.8	.....	6.1	15,647
1935.....	81,385	16.1	.....	11.8	.....	5.9	16,752
1936.....	71,552	13.6	.....	13.2	.....	5.3	19,436
1936							
May.....	57,214	11.1	60,300	11.1	31,600	5.7	16,670
June.....	51,670	10.1	55,826	10.1	29,143	5.3	14,002
July.....	46,181	9.0	56,800	10.6	30,000	5.4	10,501
August.....	47,144	9.0	58,300	10.9	28,500	5.1	12,135
September.....	49,514	9.5	60,629	11.0	28,336	5.1	11,593
October.....	57,128	10.9	61,100	11.5	24,000	4.3	13,780
November.....	67,869	12.8	65,900	12.3	20,000	3.6	14,239
December.....	99,776	18.5	78,864	14.3	18,176	3.3	22,069
1937							
January.....	85,717	15.8	87,300	16.6	17,500	3.3	35,170
February.....	80,637	14.5	84,100	16.0	16,000	3.0	39,510
March.....	83,024	14.9	66,985	12.7	14,488	2.7	35,324
April.....	68,156	12.1	51,300	9.7	12,100	2.2	24,765
May.....	51,903	9.2	.....	.....	.....	.....	16,936

¹ Preliminary figures.² New series, from 1933 on.³ Revised figures.

Building Operations

SUMMARY OF BUILDING CONSTRUCTION IN PRINCIPAL CITIES, JUNE 1937 ¹

IN JUNE building-construction activity, measured by the value of permits issued, registered an increase of 3.6 percent compared with the preceding month. Moderate increases occurred in the value of permits issued for new residential construction and for additions, alterations, and repairs. New residential construction showed a gain of 6.4 percent and additions, alterations, and repairs increased 8.2 percent. These increases in activity, however, were partially offset by a drop of 3.9 percent in the value of permits issued for new nonresidential construction.

Compared with June 1936, the permit value of building construction dropped 5.2 percent. The value of new residential buildings decreased 7.8 percent and the value of new nonresidential buildings 15.0 percent. The value of additions, alterations, and repairs to existing structures, on the other hand, increased 18.2 percent.

Comparisons of June 1937 with May 1937 and June 1936

A summary of building construction in 1,437 identical cities in June 1937, May 1937, and June 1936 is given in table 1.

TABLE 1.—Summary of Building Construction in 1,437 Identical Cities, June 1937

Class of construction	Number of buildings			Estimated cost		
	June 1937	Percentage change from—		June 1937	Percentage change from—	
		May 1937	June 1936		May 1937	June 1936
All construction.....	61,522	-4.6	+5.0	\$149,694,089	+3.6	-5.2
New residential.....	11,932	-6.2	+8.3	70,871,590	+6.4	-7.8
New nonresidential.....	10,702	-7.3	-0.3	43,280,300	-3.9	-15.0
Additions, alterations, and repairs.....	38,888	-3.3	+5.6	35,542,199	+8.2	+18.2

A summary of the estimated cost of housekeeping dwellings and of the number of families provided for in new dwellings in 1,437

¹ More detailed information by geographic division and individual cities is given in a separate pamphlet entitled "Building Construction, June 1937", copies of which will be furnished upon request.

identical cities, having a population of 2,500 and over is shown in table 2 for the months of May and June 1937 and June 1936.

TABLE 2.—*Estimated Cost of Housekeeping Dwellings and Families Provided for in 1,437 Identical Cities, June and May 1937 and June 1936*

Type of dwelling	Estimated cost of house-keeping dwellings			Number of families pro-vided in new dwellings		
	June 1937	Percentage change from—		June 1937	Percentage change from—	
		May 1937	June 1936		May 1937	June 1936
All types.....	\$69,975,284	+7.2	-8.1	16,587	+4.9	-14.4
1-family.....	48,560,012	+8.1	+6.7	10,934	-7.2	+7.4
2-family ¹	2,757,083	-5.9	+10.9	993	-4.0	+15.6
Multifamily ²	18,658,189	+96.7	-33.8	4,660	+55.7	-44.1

¹ Includes 1- and 2-family dwellings with stores.

² Includes multifamily dwellings with stores.

Analysis by Size of City, May and June 1937

The estimated cost of building construction for which permits were issued in the 1,437 identical cities reporting for the months of May and June 1937, together with the number of family-dwelling units provided in new dwellings, by size of city, is given in table 3.

TABLE 3.—*Estimated Cost of Building Construction and Families Provided for in New Dwellings in 1,437 Identical Cities, by Size of City, May and June 1937*

Size of city	Total building construction			Number of families provided for in—							
	June 1937	May 1937	Per-centage change	All types		1-family dwellings		2-family dwellings ¹		Multi-family dwellings ²	
				June 1937	May 1937	June 1937	May 1937	June 1937	May 1937	June 1937	May 1937
Total, all cities.....	\$149,694,089	\$144,490,774	+3.6	16,587	15,814	10,934	11,787	993	1,034	4,660	2,993
500,000 and over.....	52,559,574	49,255,786	+6.7	5,150	4,533	2,436	2,584	209	240	2,505	1,709
100,000 and under 500,000.....	35,917,983	30,181,320	+19.0	3,827	3,389	2,502	2,718	299	317	1,026	354
50,000 and under 100,000.....	15,153,094	16,882,728	-10.2	1,644	1,510	1,100	1,195	136	135	408	180
25,000 and under 50,000.....	13,103,157	13,537,631	-3.2	1,436	1,592	1,219	1,353	101	93	116	146
10,000 and under 25,000.....	19,344,065	18,813,572	+2.8	2,529	2,552	2,024	2,186	123	111	382	255
5,000 and under 10,000.....	8,684,112	9,783,314	-11.2	1,234	1,481	988	1,100	84	69	162	312
2,500 and under 5,000.....	4,932,104	6,036,423	-18.3	767	757	665	651	41	69	61	37

¹ Includes 1- and 2-family dwellings with stores.

² Includes multifamily dwellings with stores.

Construction During First 6 Months, 1936 and 1937

Cumulative totals for the first 6 months of 1937 compared with the same months of the preceding year are shown in table 4. The data are based on reports received from cities having a population of 2,500 and over.

TABLE 4.—*Estimated Cost of Building Construction, Cities of 2,500 Population and Over, First 6 Months, 1936 and 1937, by Class of Construction*

Class of construction	Estimated cost of building construction		
	First 6 months of—		Percentage change
	1937	1936	
All construction.....	\$870, 631, 875	\$689, 884, 581	+26. 2
New residential.....	416, 366, 729	294, 957, 095	+41. 2
New nonresidential.....	266, 333, 066	219, 363, 611	+21. 4
Additions, alterations, and repairs.....	187, 932, 080	144, 863, 875	+29. 7

Table 5 presents the estimated cost of housekeeping dwellings and number of family-dwelling units provided in cities with a population of 2,500 and over, for the first 6 months of 1936 and 1937.

TABLE 5.—*Estimated Cost and Families Provided for, Cities of 2,500 Population and Over, First 6 Months, 1936 and 1937, by Type of Dwelling*

Type of dwelling	Housekeeping dwellings					
	Estimated cost			Number of families provided for		
	First 6 months of—		Per-centage change	First 6 months of—		Per-centage change
	1937	1936		1937	1936	
All types.....	\$410, 931, 686	\$290, 023, 698	+41. 7	101, 233	72, 174	+40. 3
1-family.....	292, 841, 460	207, 670, 568	+41. 0	64, 812	46, 729	+38. 7
2-family ¹	17, 340, 270	10, 919, 384	+58. 8	6, 100	3, 978	+53. 3
Multifamily ²	100, 749, 956	71, 433, 746	+41. 0	30, 321	21, 467	+41. 2

¹ Includes 1- and 2-family dwellings with stores.

² Includes multifamily dwellings with stores.

The information on building permits issued during May and June 1937 and June 1936 is based on reports received by the Bureau of Labor Statistics from 1,437 identical cities having a population of 2,500 and over.

The information is collected by the Bureau of Labor Statistics direct from local building officials, except in the States of Illinois, Massachusetts, New Jersey, New York, North Carolina, and Pennsylvania, where the State departments of labor collect and forward the information to the Bureau. The cost figures shown in this report are estimates made by prospective builders on applying for permits to build. No land costs are included. Only building projects within the corporate limits of the cities enumerated are included in the Bureau's tabulation. In addition to permits issued for private building construction, the statistics include the value of contracts awarded for Federal and State buildings in the cities covered. Information concerning public building is collected by the Bureau from the various

Federal and State agencies having the power to award contracts for building construction. These data are then added to the data concerning private construction received from local building officials. In June 1937 the value of Federal and State buildings for which contracts were awarded in these 1,437 cities amounted to \$13,620,000, in May 1937 to \$5,457,000, and in June 1936 to \$10,762,000.

Construction from Public Funds

The value of contracts awarded and force-account work started during June and May 1937 and June 1936 on construction projects financed from various Federal funds is shown in table 6.

TABLE 6.—*Value of Contracts Awarded and Force-Account Work Started on Projects Financed from Federal Funds, May and June 1937 and June 1936*¹

Federal agency	Value of contracts awarded and force-account work started		
	June 1937	May 1937 ²	June 1936 ³
Total.....	\$89,259,547	\$85,000,557	\$147,494,541
Public Works Administration:			
Federal.....	3,335,309	2,020,922	5,533,427
Non-Federal:			
N. I. R. A.....	\$8,460,177	\$2,830,124	11,595,574
E. R. A. A. 1935 and 1936 ⁴	18,441,845	24,240,008	\$44,035,242
Federal projects under The Works Program.....	10,320,804	14,566,102	29,291,360
Regular governmental appropriations.....	48,701,412	41,343,401	57,038,938

¹ Preliminary, subject to revision.

² Revised.

³ Includes \$4,347,953 low-cost housing projects (Housing Division, P. W. A.).

⁴ Revised; includes \$874,577 low-cost housing projects (Housing Division, P. W. A.).

ects (Housing Division, P. W. A.).

⁵ Revised; includes \$3,595,163 low-cost housing projects (Housing Division, P. W. A.).

⁶ Includes First Deficiency Act funds, 1936.

The value of public-building and highway construction awards financed wholly from appropriations from State funds, as reported by the various State governments for June and May 1937 and June 1936 is shown in table 7.

TABLE 7.—*Value of Public-Building and Highway-Construction Awards Financed Wholly from State Funds*

Type of project	Value of contracts		
	June 1937	May 1937	June 1936
Public buildings.....	\$1,502,467	\$1,203,212	\$4,361,733
Highway construction.....	8,621,883	10,916,753	3,896,811

Retail Prices

FOOD PRICES IN JUNE 1937

THE COMPOSITE index of the cost of food changed little between May 18 and June 15. The decline of 0.2 percent was due to lower costs for fresh vegetables, with particular reference to a sharp break in the price of potatoes.

The index for all foods on June 15 was 86.3 percent of the 1923-25 average. This was 3.0 percent higher than in June a year ago. Meats, which cost 8.8 percent more than last June, have advanced more than any other major commodity group. Fresh fruits and vegetables cost 9.9 percent less than in June 1936 and eggs are slightly lower. The present index is at the highest point in June of any year since 1930. Both the general food index and indexes for major food groups are still well below the level of June 1929, when the index was 103.7.

Details by Commodity Groups

The cost of cereals and bakery products rose 0.5 percent from May 18 to June 15, to a level above that of any month since July 1930. The increase during the past month was chiefly due to advances in the price of bread. The average price of white bread increased 1.0 percent and was higher in 18 cities. Rye bread advanced 0.8 percent and whole-wheat bread 0.2 percent. Prices of cereals changed slightly, with a range from an increase of 0.7 percent for wheat cereal to a decrease of 0.7 percent for wheat flour.

The cost of meats advanced 2.6 percent. The index for this group now stands at 102.3 percent of the 1923-25 average. The average increase for the beef items was 3.0 percent, for pork 2.7 percent, and for lamb 2.2 percent. Higher prices were reported for all items in the group, and price levels are well above the average for 1936.

Dairy products declined 0.5 percent. The price of butter decreased 1.3 percent to the seasonal low but is higher than in any June since 1930. The price of fresh milk averaged 0.1 percent lower, with reductions reported from five cities. The greatest decrease, 6.7 percent, was for Richmond. Cheese and cream decreased slightly. The price of evaporated milk remained unchanged.

Eggs, which had reached the seasonal low in May, increased 1.2 percent. Higher prices were reported for 31 of the 51 cities in the index.

The cost of fruits and vegetables declined 4.7 percent. This was due to marked price decreases for such staple vegetables as potatoes, cabbage, onions, green beans, and lettuce. Decreases for these items ranged from 9.1 percent for lettuce to 25.9 percent for green beans. Potato prices declined in 49 cities and reached the low for the year. Carrots, on the other hand, showed a price increase of 41.7 percent, and the price of celery advanced 21.1 percent. Increases were reported for apples, lemons, and oranges. The price of oranges was higher than at any June price-reporting period since 1930. The cost of the canned fruit and vegetable items in the group increased 0.3 percent. The only significant change was an advance of 2.2 percent for canned asparagus. The cost of the dried items remained unchanged.

Beverages and chocolate showed a cost increase of 0.4 percent. The index for this group has moved up to the level of June 1935. Each item in the group advanced in price. Coffee led with an advance of 0.7 percent.

Fats and oils averaged 0.7 percent higher than in May. The price of lard rose 2.0 percent. Price advances for other items in the group ranged from 0.1 percent for vegetable shortening to 0.8 percent for lard compound. Oleomargarine alone showed a price decline.

A decrease of 1.0 percent in the price of sugar accounted for a decline of 0.6 percent in the cost of sugar and sweets. Price changes for other items in this group were negligible.

Indexes of retail food costs for June and May 1937, together with corresponding indexes for June 1936, 1933, and 1929, are shown in table 1. The chart on page 490 shows trends in the costs of all foods and of each major commodity group for the period from January 1929 to June 1937, inclusive.

TABLE 1.—Indexes of Retail Food Costs in 51 Large Cities Combined,¹
by Commodity Groups

June 15 and May 18, 1937, and June 1936, 1933, and 1929

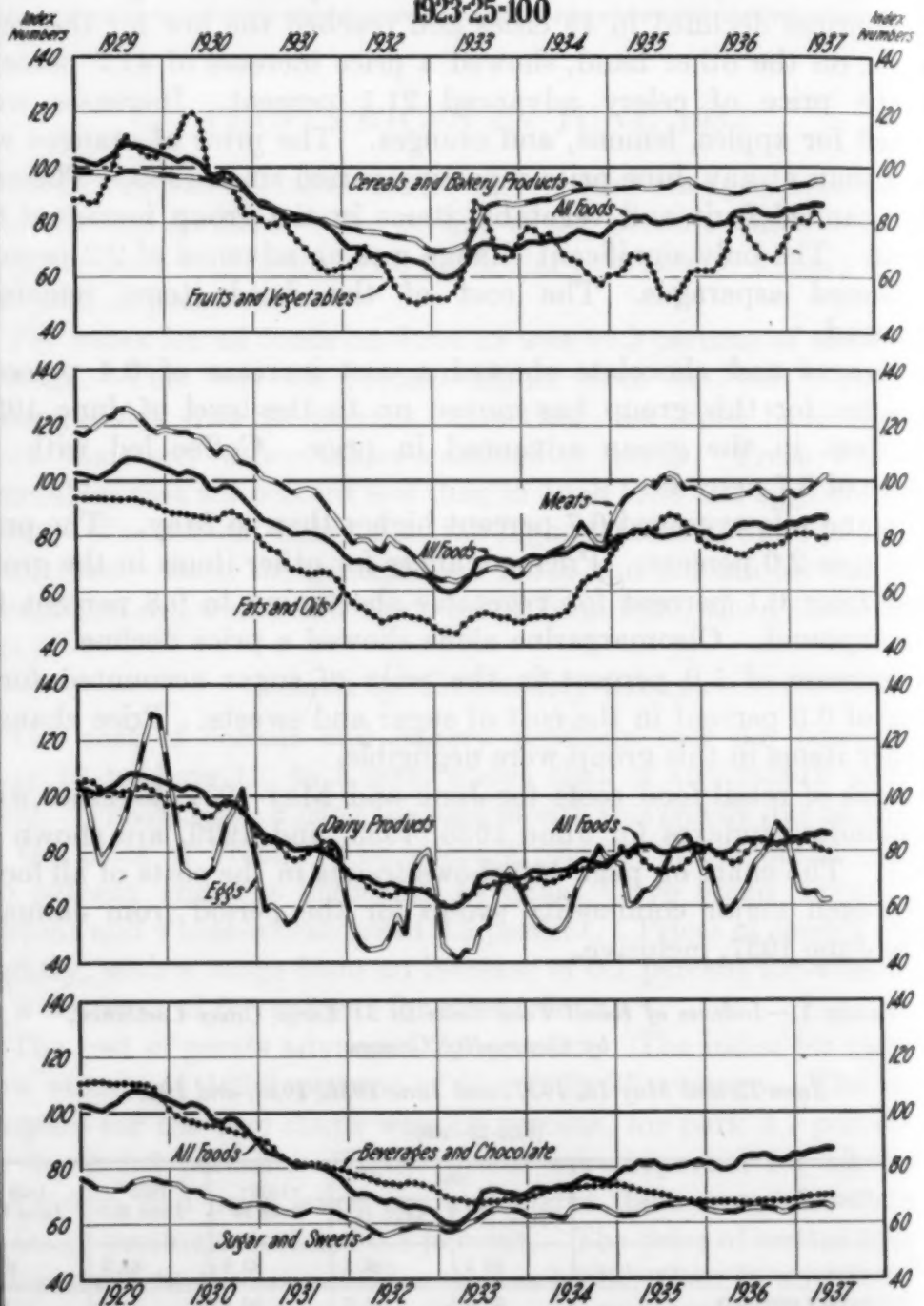
[1923-25=100]

Commodity group	1937		1936	1933	1929
	June 15	May 18	June 16	June 15	June 15
All foods.....	86.3	86.5	83.8	64.9	103.7
Cereals and bakery products.....	95.6	95.2	90.4	71.8	97.7
Meats.....	102.3	99.7	94.0	65.9	123.3
Dairy products.....	79.7	80.1	76.5	64.7	101.4
Eggs.....	62.5	61.8	63.0	43.5	85.7
Fruits and vegetables.....	79.2	83.1	85.2	67.5	98.2
Fresh.....	78.5	83.0	87.1	68.9	97.8
Canned.....	83.4	83.2	78.3	66.7	98.1
Dried.....	76.6	76.6	58.4	52.5	102.5
Beverages and chocolate.....	70.0	69.7	66.9	67.3	110.5
Fats and oils.....	79.5	78.9	73.0	49.9	93.4
Sugar and sweets.....	65.7	66.1	64.5	61.0	72.3

¹ Aggregate costs of 42 foods in each city prior to Jan. 1, 1935, and of 84 foods since that date, weighted to represent total purchases, have been combined with the use of population weights.

RETAIL COST OF FOOD

1923-25=100



UNITED STATES BUREAU OF LABOR STATISTICS

Prices of 60 of the 84 items included in the index rose between May and June; 21 foods were lower in price; 3 foods showed no change. Prices of 70 of these foods were higher than in June 1936. The most conspicuous increases over a year ago are for the beef items, apples, oranges, and certain vegetables. Of the 14 items for which prices are lower than a year ago; the only marked decreases were for cabbage and potatoes. Average prices of each of the 84 foods for 51 cities combined are shown in table 2 for June and May 1937 and for June 1936.

TABLE 2.—Average Retail Prices of 84 Food in 51 Large Cities Combined¹

June and May 1937 and June 1936

[*Indicates the 42 foods included in indexes prior to Jan. 1, 1935]

Article	1937		1936
	June 15	May 18	June 16
Cereals and bakery products:			
Cereals:	Cents	Cents	Cents
*Flour, wheat.....pound.....	5.0	5.0	4.5
*Macaroni.....do.....	15.5	15.5	15.1
*Wheat cereal.....28-oz. package.....	24.5	24.3	24.2
*Corn flakes.....8-oz. package.....	8.1	8.1	8.1
*Corn meal.....pound.....	5.6	5.6	4.9
*Hominy grits.....24-oz. package.....	9.7	9.7	8.9
*Rice.....pound.....	8.5	8.6	8.6
*Rolled oats.....do.....	7.5	7.5	7.4
Bakery products:			
*Bread, white.....do.....	8.7	8.6	8.1
Bread, whole wheat.....do.....	9.7	9.6	9.3
Bread, rye.....do.....	9.4	9.3	8.9
Cake.....do.....	25.3	25.3	25.2
Soda crackers.....do.....	18.4	18.3	18.1
Meats:			
Beef:			
*Sirloin steak.....do.....	44.0	42.3	37.0
*Round steak.....do.....	39.7	38.1	33.5
*Rib roast.....do.....	33.4	32.4	28.8
*Chuck roast.....do.....	26.0	25.1	21.6
*Plate.....do.....	17.2	16.8	14.8
Liver.....do.....	25.6	25.4	25.9
Veal:			
Cutlets.....do.....	41.7	41.3	40.9
Pork:			
*Chops.....do.....	37.6	36.3	34.4
Loin roast.....do.....	31.1	29.9	28.5
*Bacon, sliced.....do.....	40.6	40.0	40.5
Bacon, strip.....do.....	34.9	34.5	35.1
*Ham, sliced.....do.....	49.9	49.2	48.1
Ham, whole.....do.....	30.9	29.9	31.6
Salt pork.....do.....	25.5	25.2	23.5
Lamb:			
Breast.....do.....	14.0	14.0	14.2
Chuck.....do.....	24.2	23.9	24.7
*Leg.....do.....	31.6	30.6	31.3
Rib chops.....do.....	39.4	38.7	39.3
Poultry:			
*Roasting chickens.....do.....	32.7	32.3	31.8
Fish:			
Salmon, pink.....16-oz. can.....	13.2	13.0	13.1
*Salmon, red.....do.....	25.2	25.0	25.5
Dairy products:			
*Butter.....pound.....	38.3	38.8	35.8
*Cheese.....do.....	28.8	28.9	26.7
Cream..... $\frac{1}{2}$ pint.....	14.7	14.7	14.6
Milk, fresh (delivered and store) ².....quart.....	11.8	11.9	11.6
*Milk, fresh (delivered).....do.....	12.1	12.1	11.8
*Milk, evaporated.....14 $\frac{1}{2}$ -oz. can.....	7.6	7.6	7.4
*Eggs.....dozen.....	32.5	32.1	32.8

¹ Prices for individual cities are combined with the use of population weights.

² Average prices of milk delivered by dairies and

sold in grocery stores, weighted according to the relative proportion distributed by each method.

TABLE 2.—Average Retail Prices of 84 Foods in 51 Large Cities Combined—Continued
June and May 1937 and June 1936—Continued

[*Indicates the 42 foods included in indexes prior to Jan. 1, 1935]

Article	1937		1936
	June 15	May 18	June 16
Fruits and vegetables:			
Fresh:	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
Apples.....pound..	8.3	7.9	6.4
*Bananas.....do.....	6.4	6.5	6.3
Lemons.....dozen..	33.6	31.2	32.8
*Oranges.....do.....	40.3	38.8	34.7
Beans, green.....pound..	10.7	14.5	10.0
*Cabbage.....do.....	4.2	5.4	5.4
Carrots.....bunch..	9.3	6.6	5.5
Celery.....stalk..	11.3	9.3	10.1
Lettuce.....head..	7.9	8.7	8.5
*Onions.....pound..	4.5	5.1	4.0
*Potatoes.....do.....	3.0	3.6	4.9
Spinach.....do.....	6.2	6.4	6.0
Sweet potatoes.....do.....	6.1	5.9	5.1
Canned:			
Peaches.....no. 2½ can..	19.5	19.3	17.7
Pears.....do.....	22.3	22.2	22.0
Pineapple.....do.....	22.9	22.7	22.3
Asparagus.....no. 2 can..	28.3	27.7	26.1
Beans, green.....do.....	12.5	12.5	11.4
*Beans with pork.....16-oz. can..	8.1	8.0	7.0
*Corn.....no. 2 can..	13.3	13.2	11.3
*Peas.....do.....	16.5	16.5	15.8
*Tomatoes.....do.....	9.5	9.5	9.2
Tomato soup.....10½-oz. can..	8.2	8.2	8.2
Dried:			
Peaches.....pound..	17.5	17.5	17.1
*Prunes.....do.....	10.7	10.8	9.6
*Raisins.....15-oz. package..	10.2	10.1	9.7
Black-eyed peas.....pound..	9.9	10.0	8.8
Lima beans.....do.....	12.1	12.0	10.7
*Navy beans.....do.....	10.8	10.8	5.7
Beverages and chocolate:			
*Coffee.....do.....	25.6	25.4	24.0
*Tea.....do.....	72.4	72.3	67.7
Cocoa.....8-oz. can..	10.5	10.5	10.6
Chocolate.....8-oz. package..	17.1	17.0	16.4
Fats and oils:			
*Lard.....pound..	17.2	16.9	15.5
Lard compound.....do.....	15.9	15.8	14.4
*Vegetable shortening.....do.....	22.0	21.9	21.3
Salad oil.....pint..	25.9	25.8	24.7
Mayonnaise.....½ pint..	17.6	17.4	17.0
*Oleomargarine.....pound..	19.3	19.5	17.6
Peanut butter.....do.....	20.1	19.9	18.5
Sugar and sweets:			
*Sugar.....do.....	5.6	5.7	5.6
Corn sirup.....24-oz. can..	14.6	14.6	13.6
Molasses.....18-oz. can..	14.6	14.6	14.3
Strawberry preserves.....pound..	22.2	22.1	20.2

Details by Regions and Cities

The decrease of 0.2 percent in food costs for the 51 cities combined was the net result of higher costs in 21 cities and lower costs in 28 cities. Costs advanced in all of the New England cities. The Mountain and Pacific Coast cities reported the heaviest decreases. In Seattle and Los Angeles, where the decrease was most marked, prices of fruits and vegetables dropped more than elsewhere. The greatest increase, 1.9 percent, was reported

for Indianapolis where prices of certain fruits and vegetables rose sharply, and meats advanced more than in most cities. In Milwaukee, where food costs rose 1.6 percent, the price of white bread rose 12.6 percent and rye bread advanced 6.2 percent.

TABLE 3.—Indexes of the Average Retail Cost of all Foods, by Regions and Cities ¹

June and May 1937, and June 1936, 1935, 1933, 1932, and 1929

[1923-25=100]

Region and city	1937		1936	1935	1933	1932	1929
	June 15	May 18	June 16	June 18	June 15	June 15	June 15
Average: 51 cities combined.....	86.3	86.5	83.8	81.5	64.9	67.6	103.7
New England	84.0	83.4	82.6	79.3	64.4	67.3	101.7
Boston.....	81.3	80.8	81.1	77.9	63.3	65.6	100.9
Bridgeport.....	90.2	89.4	85.9	84.0	67.5	70.1	103.1
Fall River.....	87.1	86.2	83.3	78.9	62.9	65.8	101.1
Manchester.....	87.3	86.3	87.3	81.6	65.6	65.4	101.2
New Haven.....	89.3	88.7	86.5	82.9	66.6	72.0	103.3
Portland, Maine.....	86.9	85.8	84.0	81.0	65.7	69.4	102.8
Providence.....	84.1	83.9	81.8	77.9	64.9	67.6	102.5
Middle Atlantic	85.8	86.3	84.6	81.7	65.8	69.9	103.6
Buffalo.....	87.3	88.0	85.2	82.2	65.7	69.1	105.3
Newark.....	86.7	86.3	84.2	82.6	66.1	72.9	102.8
New York.....	83.6	84.4	84.2	81.7	67.5	71.9	102.8
Philadelphia.....	89.1	89.3	86.8	82.2	65.6	70.1	103.7
Pittsburgh.....	85.4	85.8	82.7	80.8	62.4	65.0	106.4
Rochester.....	90.1	89.9	86.8	81.1	63.1	66.8	101.2
Scranton.....	84.5	84.7	81.4	79.0	63.9	66.8	105.6
East North Central	88.7	88.2	85.1	82.8	64.5	67.0	106.0
Chicago.....	89.0	88.6	84.3	81.4	65.8	69.8	106.9
Cincinnati.....	90.5	90.5	88.1	87.5	66.4	68.1	109.7
Cleveland.....	86.8	86.6	84.4	83.9	63.0	65.6	104.8
Columbus, Ohio.....	86.9	87.5	80.4	84.8	64.7	67.3	102.7
Detroit.....	89.0	88.1	85.5	82.4	61.5	62.6	106.1
Indianapolis.....	90.2	88.5	86.8	80.9	65.5	66.2	105.1
Milwaukee.....	92.9	91.4	86.2	84.1	67.6	70.2	104.6
Peoria.....	90.9	89.6	88.1	84.0	65.2	66.2	101.4
Springfield, Ill.....	87.0	87.9	84.3	81.1	64.6	64.7	103.8
West North Central	91.4	92.2	87.3	86.2	65.9	66.5	104.9
Kansas City.....	91.3	91.0	85.4	83.5	67.9	67.4	102.6
Minneapolis.....	94.2	95.4	89.9	87.9	64.3	68.1	105.1
Omaha.....	87.2	88.0	83.9	85.2	63.3	63.1	101.5
St. Louis.....	92.3	93.8	89.3	87.6	67.3	66.7	108.9
St. Paul.....	91.1	91.6	86.2	85.5	63.4	67.2	101.3
South Atlantic	85.2	85.5	82.4	81.0	63.2	66.3	102.4
Atlanta.....	82.8	83.1	78.2	77.1	62.7	64.2	103.8
Baltimore.....	89.0	89.5	88.6	86.2	65.2	68.1	102.1
Charleston, S. C.....	84.7	84.3	81.1	78.9	60.4	66.9	99.9
Jacksonville.....	82.3	81.1	78.9	76.1	58.5	62.8	97.7
Norfolk.....	86.0	86.8	81.0	79.5	61.6	68.4	106.7
Richmond.....	81.7	82.7	77.9	76.8	61.0	63.2	98.5
Savannah.....	84.3	84.5	82.3	79.2	61.8	64.4	104.6
Washington, D. C.....	87.1	87.2	84.8	84.5	66.7	69.3	104.6
East South Central	83.8	83.6	78.5	78.0	63.2	62.0	104.5
Birmingham.....	80.2	79.5	73.6	71.8	60.8	58.9	101.0
Louisville.....	92.9	92.8	89.6	90.1	68.7	66.8	111.8
Memphis.....	83.5	84.8	79.3	81.1	64.4	64.7	105.0
Mobile.....	81.6	81.5	76.7	75.5	59.9	62.3	101.2
West South Central	82.3	82.9	78.4	79.0	61.9	62.6	102.1
Dallas.....	80.4	81.8	75.2	79.1	62.5	61.8	103.7
Houston.....	81.5	81.7	78.9	75.7	60.1	60.6	99.9
Little Rock.....	82.7	83.5	77.8	78.0	56.7	57.8	101.6
New Orleans.....	85.8	85.8	82.3	83.7	64.7	67.6	102.8

¹ Aggregate costs of 42 foods in each city prior to Jan. 1, 1935, and of 84 foods since that date, weighted to represent total purchases, have been combined for

regions and for the United States with the use of population weights.

TABLE 3.—*Indexes of the Average Retail Cost of all Foods, by Regions and Cities—Con.
June and May 1937, and June 1936, 1935, 1933, 1932, and 1929—Continued*

[1923-25=100]

Region and city	1937		1936	1935	1933	1932	1929
	June 15	May 18	June 16	June 18	June 15	June 15	June 15
Mountain	91.3	92.5	90.1	87.6	66.7	67.2	102.7
Butte.....	85.9	86.6	85.3	80.1	62.8	65.2	104.8
Denver.....	93.2	94.9	92.4	91.1	68.0	69.2	103.6
Salt Lake City.....	89.4	89.9	87.3	83.9	65.6	64.4	100.8
Pacific	83.6	85.4	80.3	79.3	65.4	66.9	101.2
Los Angeles.....	79.4	81.9	75.0	74.3	60.6	61.8	99.3
Portland, Oreg.....	90.0	90.1	85.5	79.6	64.4	67.0	102.0
San Francisco.....	85.9	86.7	83.3	84.5	70.3	72.0	103.2
Seattle.....	86.5	89.7	85.6	81.0	68.5	69.5	102.4

The Bureau collects prices in 11 cities that cannot be included in the food-cost indexes, since no prices are available for the base period 1923-25. These cities were selected from areas not adequately represented in the food price-reporting service.

Average prices for each of these cities for which the data were available have been released since June 1935. Consumption weights have been provided for these cities, making it possible to measure changes in food costs from one period to another. Percentage changes in food costs between May and June 1937 are shown in table 4 for 10 of these cities.

TABLE 4.—*Percentage Changes in Retail Food Costs for Specified Cities
June 15, 1937, Compared with May 18, 1937*

Region and city	Percent of change June 15, 1937, compared with May 18, 1937								
	All foods	Cereals and bakery products	Meats	Dairy products	Eggs	Fruits and vegetables	Beverages and chocolate	Fats and oils	Sugar and sweets
West North Central:									
Cedar Rapids.....	-3.2	-0.2	+3.1	-1.2	-3.3	-11.9	-0.2	+0.1	-1.9
Sioux Falls.....	-1.1	-.9	+1.4	-1.6	-3.5	-3.5	+.3	+.9	-1.9
Wichita.....	0	+3.9	+2.7	+.2	+2.8	-4.6	+.1	+2.4	-2.6
South Atlantic:									
Columbia, S. C.....	-1.0	+.1	+1.5	-2.8	+2.8	-2.6	-2.2	+.2	-.6
Winston-Salem.....	+.7	-.3	+2.5	-1.1	+4.7	+.3	+.1	+1.1	+.3
East South Central:									
Jackson.....	-2.4	+1.0	+4.0	+1.9	-2.9	-12.2	-6.2	-4.7	-.7
Knoxville.....	+1.4	-1.0	+.3	-.5	+1.7	+5.0	+1.0	-1.8	-.2
West South Central:									
El Paso.....	+.1	+.7	+.5	+1.3	+5.0	-2.8	+.3	+.3	-.2
Oklahoma City.....	-2.5	-2.1	+.5	-.4	-2.8	-8.7	-.8	+1.0	+5.4
Pacific:									
Spokane.....	-1.6	-.2	-3.2	+.3	+2.2	-3.7	0	+.6	-1.1

RETAIL PRICES OF ELECTRICITY

Changes Between March 15 and June 15, 1937

RESIDENTIAL rates for electricity are secured quarterly from 51 cities. These rates are used for computing average prices and typical bills in each city for the quantities of electricity which most

nearly approximate the consumption requirements for the usual domestic services for a five-room house, including living room, dining room, kitchen, and two bedrooms. The blocks of consumption which have been selected as representative of average conditions throughout the country are 25 and 40 kilowatt-hours for the use of electricity for lighting and small appliances alone; 100 kilowatt-hours for lighting, small appliances, and a refrigerator; and 250 kilowatt-hours for the addition of an electric range to the preceding equipment.

The technical specifications which are used as the basis for the application of the rate schedules are:

Floor area (1,000 square feet).	
Connected load:	
Lighting and appliances	700
Refrigeration	300
Cooking	6,000
Measured demand:	
Lighting and appliances	600
Refrigeration	100
Cooking	2,300
Outlets: Fourteen 50-watt.	
Active room count: In accordance with schedule of rates.	

Between March 15 and June 15, 1937, rate reductions were made in 5 of the 51 reporting cities—Fall River, Cleveland, Indianapolis, Birmingham, and Salt Lake City. In Fall River, Birmingham, and Salt Lake City, the reduction was most advantageous to consumers of a small amount of current, the decreases for 25 kilowatt-hours ranging from 7.4 percent in Birmingham to 10.0 percent in Fall River. In Indianapolis, customers in the intermediate consumption brackets benefited most, the decrease being least for 25 kilowatt-hours and 250 kilowatt-hours. In Cleveland, the reduction was greatest for high consumption and the 250 kilowatt-hours bill was lowered by 25 percent. Customers in Birmingham and Salt Lake City are served under either an "Immediate" or an "Objective" rate schedule¹. Reductions were made in "Immediate" rates only.

The Missouri sales tax was increased from 1 percent to 2 percent. This resulted in an increase in the cost of electricity in Kansas City and St. Louis.

Changes in net monthly bills and average prices of electricity between March 15 and June 15 are shown in table 5 for these seven cities.

¹ "Objective" rate schedules provide rates lower than the "Immediate" rate schedules and are devised to encourage the increased use of electricity. They are available only to customers who have increased their consumption. A monthly base bill covering the use of electricity for some earlier period is computed for each customer. If his use of electricity during any current month, figured under the "Immediate" rate, results in a bill less than the base bill, the "Immediate" rate applies for that month. When the customer's monthly use of electricity has increased sufficiently to produce a bill larger than the base bill, when figured under the lower "Objective" rate, that rate applies.

TABLE 5.—Changes in Retail Prices of Electricity Between Mar. 15 and June 15, 1937—Monthly Bill, Price per Kilowatt-Hour, and Percentage Change

City and date	Type of ownership ¹	Net monthly bill				Net monthly price per kilowatt-hour			
		25 kilowatt-hours	40 kilowatt-hours	100 kilowatt-hours	250 kilowatt-hours	25 kilowatt-hours	40 kilowatt-hours	100 kilowatt-hours	250 kilowatt-hours
		Lighting and small appliances	Lighting and small appliances	Lighting, appliances, and refrigerator	Lighting, appliances, refrigerator, and range	Lighting and small appliances	Lighting and small appliances	Lighting, appliances, and refrigerator	Lighting, appliances, refrigerator, and range
New England:									
Fall River:									
Mar. 15, 1937.....	P	\$1.75	\$2.60	\$5.20	\$9.35	Cents 7.0	Cents 6.5	Cents 5.2	Cents 3.7
June 15, 1937.....	P	\$1.58	\$2.38	\$4.98	\$9.13	6.3	5.9	5.0	3.7
Percentage change ²		-10.0	-8.7	-4.3	-2.4				
East North Central:									
Cleveland:									
Company 1:									
Mar. 15, 1937.....	P	\$1.00	\$1.60	\$4.00	\$9.88	4.0	4.0	4.0	4.0
June 15, 1937.....	P	\$1.00	\$1.60	\$3.75	\$7.25	4.0	4.0	3.8	2.9
Percentage change ²				6.3	-26.6				
Company 2:									
Mar. 15, 1937.....	M	\$0.88	\$1.31	\$3.05	\$7.40	3.5	3.3	3.1	3.0
June 15, 1937.....	M	\$0.85	\$1.27	\$2.80	\$5.55	3.4	3.2	2.8	2.2
Percentage change ²		-2.9	-3.1	-8.2	-25.0				
Indianapolis:									
Mar. 15, 1937.....	P	\$1.44	\$2.30	\$4.80	\$8.53	5.8	5.8	4.8	3.4
June 15, 1937.....	P	\$1.38	\$2.10	\$4.40	\$8.15	5.5	5.3	4.4	3.3
Percentage change ²		-4.4	-8.7	-8.3	-4.4				
West North Central:									
Kansas City:									
Mar. 15, 1937 ³	P	\$1.64	\$2.32	\$4.04	\$7.83	6.6	5.8	4.0	3.1
June 15, 1937 ⁴	P	\$1.66	\$2.35	\$4.08	\$7.91	6.6	5.9	4.1	3.2
Percentage change ²		+1.0	+1.0	+1.0	+1.0				
St. Louis:									
Company 1:									
Mar. 15, 1937 ³	P	\$1.20	\$1.73	\$3.17	\$6.28	4.8	4.3	3.2	2.5
June 15, 1937 ⁴	P	\$1.21	\$1.74	\$3.20	\$6.35	4.8	4.4	3.2	2.5
Percentage change ²		+1.0	+1.0	+1.0	+1.0				
Company 2:									
Mar. 15, 1937 ³	P	\$1.08	\$1.44	\$2.88	\$5.76	4.3	3.6	2.9	2.3
June 15, 1937 ⁴	P	\$1.09	\$1.45	\$2.91	\$5.81	4.4	3.6	2.9	2.3
Percentage change ²		+1.0	+1.0	+1.0	+1.0				
East South Central:									
Birmingham:									
Immediate:⁵									
Mar. 15, 1937.....	P	\$1.35	\$2.10	\$3.85	\$7.40	5.4	5.3	3.9	3.0
June 15, 1937.....	P	\$1.25	\$2.00	\$3.75	\$7.30	5.0	5.0	3.8	2.9
Percentage change ²		-7.4	-4.8	-2.6	-1.4				
Mountain:									
Salt Lake City:									
Present:⁵									
Mar. 15, 1937 ⁴	P	\$1.78	\$2.69	\$4.92	\$7.85	7.1	6.7	4.9	3.1
June 15, 1937 ⁴	P	\$1.63	\$2.40	\$4.92	\$7.85	6.5	6.0	4.9	3.1
Percentage change ²		-8.1	-11.0						

¹ Type of ownership is indicated as follows: P, private utility; M, municipal plant.

² Net monthly bills are computed to mills for purposes of comparison.

³ Prices include a 1-percent sales tax.

⁴ Prices include a 2-percent sales tax.

⁵ No change in "Objective rate."

RETAIL PRICES OF GAS

Changes Between March 15 and June 15, 1937

RESIDENTIAL rates for gas are secured from 50 cities. These rates are used in computing average prices and typical bills for each city for quantities of gas which approximate the average residential consumption requirements for each of four combinations of services. These prices are published quarterly for March, June, September, and December.

In order to put the rate quotations upon a comparable basis it is necessary to convert the normal consumption requirements used for

computing monthly bills into an equivalent heating value expressed in therms (1 therm=100,000 B. t. u.). This procedure is necessary because of the wide range in the heating value of a cubic foot of gas between different cities. The equipment and blocks of consumption which have been selected as representative of average conditions throughout the country are based upon the requirements of a five-room house, including living room, dining room, kitchen, and two bedrooms.

These specifications are:

	Therms
Range.....	10.6
Range and manual-type water heater.....	19.6
Range and automatic-storage or instantaneous type water heater.....	30.6
Range, automatic-storage or instantaneous type water heater, and refrigerator.....	40.6

Changes in Average Prices, March to June 1937

Changes in the average price of gas for residential customers have been reported for nine cities since March 15, 1937. For six cities the changes were due to reductions in rates. The greatest decreases shown were for the use of 40.6 therms in Richmond, Va., and in the boroughs of Bronx, Manhattan, and Queens, in New York City, where net monthly bills for this service have been lowered by about 21 percent. In Richmond the reductions were due to the introduction of a new rate schedule for customers using gas for refrigeration or water heating. In the three boroughs of New York City, summer rates available from June to September, inclusive, provide lower prices for gas consumed in excess of 3,000 cubic feet per month. In Scranton the introduction of an optional residential rate schedule provided reductions of from 3.5 percent for range and automatic water heater to 8.1 percent for range and manual-type water heater. In Milwaukee an increase in the service charge and a decrease in rates resulted in an increase of 1.8 percent for the use of 10.6 therms, and decreases of from 4.7 percent for 19.6 therms to 8.4 percent for 40.6 therms. In Los Angeles the general decrease was a little less than 1 percent. In Birmingham a decrease in the average B. t. u. caused a price increase. An increase from 1 percent to 2 percent in the Missouri State sales tax resulted in increases of 1 percent for Kansas City and St. Louis. In Charleston two rate schedules, the "Immediate" and the "Objective", became available on May 1, 1937. The rate effective prior to May 1 became the "Immediate" rate. The availability of the "Objective" rate is made contingent upon an increased use of gas.²

Changes in bills for gas between March 15 and June 15, 1937, are shown in table 6. Prices for Denver based upon changes effective September 15, 1936, are included in this table.

² See page 505 for a description of these rates.

^a Prices include 1-percent sales tax. Revised March 1937 for change from 1,000 to 1,040 B. t. u. per cubic foot, effective date not available.
^b Prices include 1-percent sales tax.
^c The use of this rate is contingent on an increase in the consumption of gas, hence no percentage change is shown in net monthly bills computed under this rate schedule with those computed under the "immediate" rate.
^d A change from 845 to 825 B. t. u. was in effect Sept. 15, 1936. Prices published in the reports for September and December did not include this change.

* Net monthly bills are computed to mills for purposes of comparison.

Indexes of Changes in the Price of Gas

A series of indexes (1923-25=100) has been computed for two of the services for which typical bills are published quarterly—10.6 therms, illustrating the use of gas for a range; and 30.6 therms, typical of heat requirements for both range and automatic water heater. These indexes were computed for quarterly periods from March 1923 to June 1936, inclusive, and were based upon bills for these services for each of the 50 cities reporting to the Bureau.

Composite indexes and city indexes for each service together with the basic data used in their computation and a statement of methodology were published recently in "Changes in retail prices of gas, 1923-1936", Bulletin No. 628 of the Bureau of Labor Statistics.

These indexes have been brought up to June 1937, and are presented in this report for the quarterly periods from March 1935 to June 1937, inclusive. Hereafter they will be published annually in December.

Basic price data for the 18 cities which have reported price changes since June 1936 will be found in reports of retail prices of gas for December 1936 and March 1937, and in table 6 of this report.

The composite indexes for the 50 cities combined, together with separate indexes for manufactured, natural, and mixed gas, are shown in table 7. Trend of prices from March 1923 through June 1937 for each service, as indicated by the composite indexes for the 50 cities combined, are presented in the chart on page 501.

TABLE 7.—Indexes of Retail Prices of Gas

March 1935-June 1937

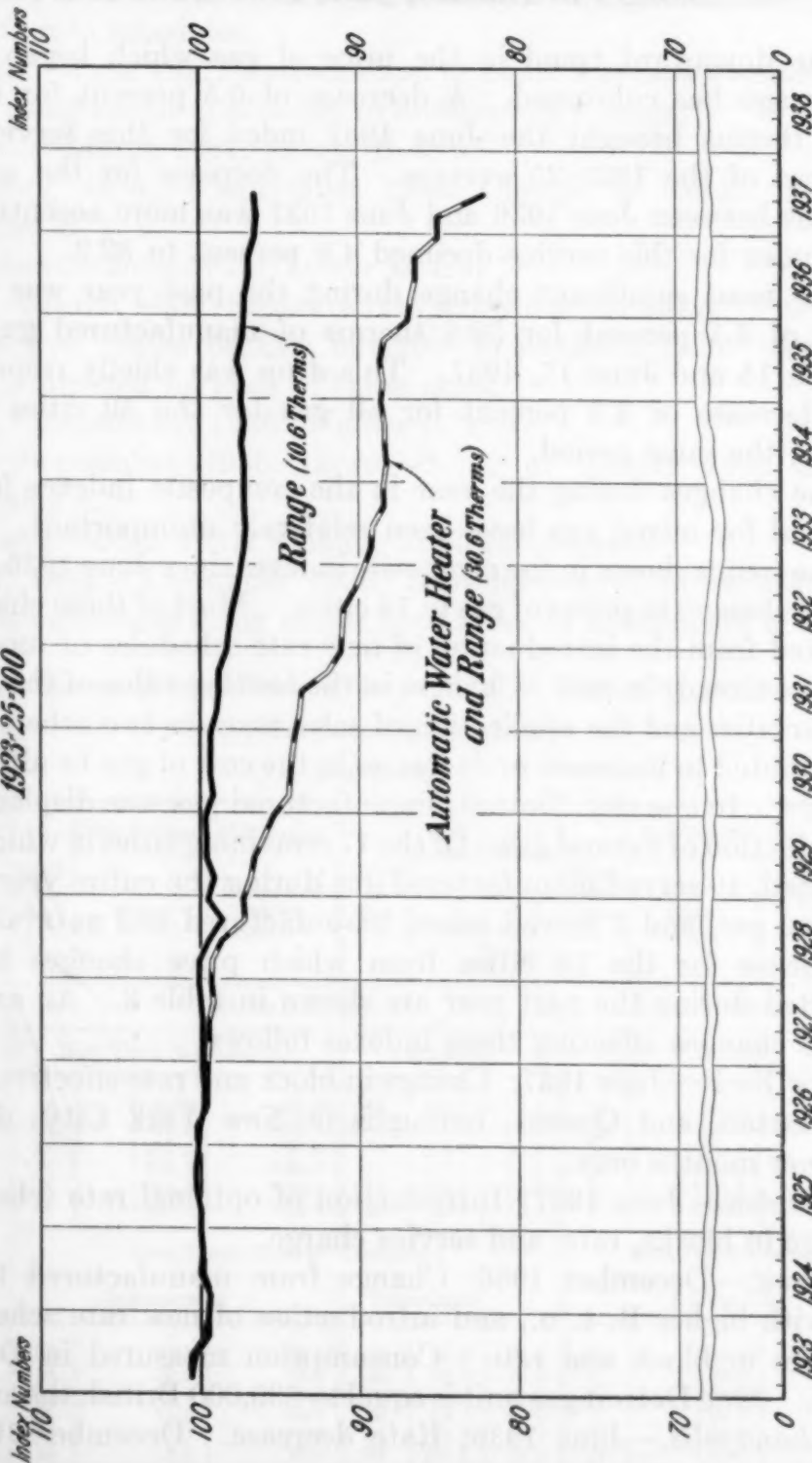
[1923-25=100]

Date	10.6 therms, range				30.6 therms, range and water heater			
	All gas	Manu- factured	Natural	Mixed	All gas	Manu- factured	Natural	Mixed
	50 cities	1923, 40 cities; 1937, 24 cities	1923, 7 cities; 1937, 19 cities	1923, 3 cities; 1937, 7 cities	50 cities	1923, 40 cities; 1937, 24 cities	1923, 7 cities; 1937, 19 cities	1923, 3 cities; 1937, 7 cities
1935:								
March.....	97.3	100.0	114.5	98.3	88.4	92.6	104.1	92.9
June.....	97.6	100.5	114.5	98.3	88.6	93.1	104.1	92.5
September.....	97.3	100.0	114.6	98.4	88.3	92.5	104.2	92.6
December.....	97.2	100.0	114.1	98.3	86.8	90.4	104.0	92.5
1936:								
March.....	97.1	100.0	114.0	¹ 98.0	86.6	90.3	103.2	92.0
June.....	96.9	99.9	112.9	98.1	86.4	90.2	101.4	92.1
September.....	96.9	99.9	113.0	98.1	86.4	90.2	101.5	92.0
December.....	96.5	99.8	113.0	98.3	85.0	90.0	101.5	92.3
1937:								
March.....	96.4	99.8	112.8	98.2	85.0	89.9	101.3	92.2
June.....	96.5	99.8	112.8	98.3	82.2	85.3	101.2	92.4

¹ Revised.

RETAIL PRICES OF GAS

50 Cities Combined
1923-25-100



U.S. BUREAU OF LABOR STATISTICS

Changes in Indexes, June 1936–June 1937

The downward trend in the price of gas which began about 10 years ago has continued. A decrease of 0.5 percent for the use of 10.6 therms brought the June 1937 index for this service to 96.5 percent of the 1923–25 average. The decrease for the use of 30.6 therms between June 1936 and June 1937 was more accentuated, and the index for this service declined 4.9 percent to 82.2.

The most significant change during the past year was the sharp drop of 5.1 percent for 30.6 therms of manufactured gas between March 15 and June 15, 1937. This drop was chiefly responsible for the decrease of 3.3 percent for all gas for the 50 cities combined during the same period.

The changes during the year in the composite indexes for natural gas and for mixed gas have been relatively unimportant.

The trends shown in the composite indexes since June 1936 have been due to changes in prices of gas in 18 cities. Most of these changes have resulted from the introduction of new rate schedules or modifications of those already in use. Changes in the heating value of the gas served in four cities and the application of sales taxes in two others have also contributed to increases or decreases in the cost of gas to ultimate consumers. In one city, Detroit, manufactured gas was displaced by the introduction of natural gas. Of the 17 remaining cities in which changes occurred, 10 served manufactured gas during the entire year, 4 served natural gas, and 3 served mixed manufactured and natural gas.

Indexes for the 18 cities from which price changes have been reported during the past year are shown in table 8. An explanation of the changes affecting these indexes follows:

New York.—June 1937: Change in block and rate effective in Bronx, Manhattan, and Queens, boroughs in New York City; during the summer months only.

Scranton.—June 1937: Introduction of optional rate schedule with change in blocks, rate, and service charge.

Detroit.—December 1936: Change from manufactured to natural gas with higher B. t. u., and introduction of new rate schedule with changes in block and rate. Consumption measured in Detroit gas units. (One Detroit gas unit is equal to 530,000 British thermal units.)

Indianapolis.—June 1936: Rate decrease. December 1936: Rate decrease.

Milwaukee.—June 1937: Change in block, rate, and service charge.

Kansas City.—June 1937: Increase from 1 to 2 percent in Missouri State sales tax.

Minneapolis.—December 1936: Rate increase.

Omaha.—March 1937: Rate decrease.

St. Louis.—June 1937: Increase from 1 to 2 percent in Missouri State sales tax.

Charleston, S. C.—June 1937: Introduction of "Immediate" and "Objective" rate schedules.

Richmond.—June 1937: Introduction of block schedule available to customers using major appliances in addition to a range.

Savannah.—March 1937: Lower B. t. u.

Washington, D. C.—September 1936: Change in block. March 1937: Higher B. t. u.

Birmingham.—June 1937: Lower B. t. u.

Mobile.—March 1936: Separate rate schedules providing "Present" and "Objective" rates became effective in January 1936. Indexes have been computed for each of these rates.

Houston.—September 1936: Higher B. t. u.

Denver.—September 1936: Lower B. t. u. Based upon prices shown in table 6.

Los Angeles.—June 1937: Change in block and rate.

Portland, Oreg.—December 1936: Introduction of block schedule available to customers using major appliances in addition to a range.

TABLE 8.—Indexes of Retail Prices of Gas for Cities in Which Changes Occurred

March 1936–June 1937, Inclusive ¹

[1923-25=100]

Year and month	Kind of gas ²	10.6 therms	30.6 therms	Kind of gas	10.6 therms	30.6 therms	Kind of gas	10.6 therms	30.6 therms
		Range	Range and water heater ³		Range	Range and water heater ³		Range	Range and water heater ³
1936: Mar..... June..... Sept..... Dec..... 1937: Mar..... June.....	Middle Atlantic						East North Central		
	New York (5 boroughs)			Scranton			Detroit		
	M	101.2	90.6	M	103.0	74.9	M	109.4	112.2
	M	101.2	90.6	M	103.0	74.9	M	109.4	112.2
	M	101.2	90.6	M	103.0	74.9	M	109.4	112.2
	M	101.2	90.6	M	103.0	74.9	N	98.8	83.7
	M	101.2	90.6	M	103.0	74.9	N	98.8	83.7
	M	101.2	82.5	M	96.0	72.2	N	98.8	83.7
	East North Central—Continued						West North Central		
	Indianapolis			Milwaukee			Kansas City		
1936: Mar..... June..... Sept..... Dec..... 1937: Mar..... June.....	M M M M M M	84.1 79.7 79.7 75.3 75.3 73.3	84.1 79.7 79.7 75.3 75.3 75.3	M M M M M M	99.2 99.2 99.2 99.2 99.2 101.0	99.0 99.0 99.0 99.0 99.0 91.4	N N N N N N	99.2 99.2 99.2 99.2 96.6 97.5	100.9 100.9 100.9 100.9 97.5 98.5
West North Central—Continued									
Minneapolis			Omaha			St. Louis			
1936: Mar..... June..... Sept..... Dec..... 1937: Mar..... June.....	X X X X X X	108.9 108.9 108.9 111.6 111.6 111.6	84.8 84.8 84.8 88.2 88.2 88.2	M M M M M M	68.4 68.4 68.4 68.4 65.2 65.2	58.1 58.1 58.1 58.1 53.9 53.9	X X X X X X	114.9 114.9 114.9 114.9 114.9 116.0	95.5 95.5 95.5 95.5 95.5 96.5

See footnotes at end of table.

TABLE 8.—Indexes of Retail Prices of Gas for Cities in Which Changes Occurred—Con.
 March 1936–June 1937, Inclusive ¹—Continued
 [1923–25=100]

Year and month	Kind of gas ¹	10.6 therms		30.6 therms		Kind of gas	10.6 therms		30.6 therms		Kind of gas	10.6 therms		30.6 therms	
		Range		Range and water heater ³			Range		Range and water heater ³			Range		Range and water heater ³	
South Atlantic															
Charleston, S. C.															
1936: Mar.....	M	89.4		82.3		M	103.9	101.9	M		86.2			86.2	
June.....	M	89.4		82.3		M	103.9	101.9	M		86.2			86.2	
Sept.....	M	89.4		82.3		M	103.9	101.9	M		86.2			86.2	
Dec.....	M	89.4		82.3		M	103.9	101.9	M		86.2			86.2	
1937: Mar.....	M	89.4		82.3		M	103.9	101.9	M		90.4			90.1	
June.....	M	89.4	97.6	82.3	67.8	M	103.9	83.0	M		90.4			90.1	
South Atlantic—Continued															
Washington, D. C.															
1936: Mar.....	X		85.2		79.0	M	99.3	99.3	N	61.9	56.4	45.3		38.7	
June.....	X		85.2		79.0	M	99.3	99.3	N	61.9	56.4	45.3		38.7	
Sept.....	X		85.2		78.0	M	99.3	99.3	N	61.9	56.4	45.3		38.7	
Dec.....	X		85.2		78.0	M	99.3	99.3	N	61.9	56.4	45.3		38.7	
1937: Mar.....	X		84.3		77.6	M	99.3	99.3	N	61.9	56.4	45.3		38.7	
June.....	X		84.3		77.6	M	101.9	101.9	N	61.9	56.4	45.3		38.7	
West South Central															
Houston															
1936: Mar.....	N		55.1		39.9	N	71.4	47.9	N		146.1			98.4	
June.....	N		55.1		39.9	N	71.4	47.9	N		146.1			98.4	
Sept.....	N		54.2		39.0	N	72.6	48.4	N		146.1			98.4	
Dec.....	N		54.2		39.0	N	72.6	48.4	N		146.1			98.4	
1937: Mar.....	N		54.2		39.0	N	72.6	48.4	N		146.1			98.4	
June.....	N		54.2		39.0	N	72.6	48.4	N		145.4			97.7	
Pacific—Continued															
Portland, Oreg.															
1936: Mar.....	M		101.0		100.7										
June.....	M		101.0		100.7										
Sept.....	M		101.0		100.7										
Dec.....	M		101.0		90.2										
1937: Mar.....	M		101.0		90.2										
June.....	M		101.0		90.2										

¹ Changes affecting indexes occurred in 18 out of the 50 cities. Indexes for "Present" and "Objective" rates in Mobile, effective Jan. 1, 1936, are also shown in this table.

² Different kinds of gas are indicated as follows: M, manufactured; N, natural; and X, mixed manufactured and natural.

³ Automatic storage or instantaneous water heater.

⁴ The price used for computing this index includes

a 2-percent sales tax.

⁵ Revised.

⁶ The price used for computing this index includes a 3-percent sales tax.

⁷ The price used for computing this index includes a 1-percent sales tax.

⁸ Index for "Present" or "Immediate" rate schedule.

⁹ Index for "Objective" rate schedule.

Immediate and Objective Rate Schedules

Objective rate schedules provide rates lower than the Immediate rate schedules and are devised to encourage the increased use of gas. They are available only to customers who have increased their consumption. A monthly base bill covering the use of gas for some earlier period is computed for each customer. If his use of gas during any current month, figured under the Immediate rate, results in a bill less than the base bill, the Immediate rate applies for that month. When the customer's monthly use of gas has increased sufficiently to produce a bill larger than the base bill, when figured under the lower Objective rate, that rate applies.

Two of the cities included in the Bureau's reports of retail prices of gas, Mobile and Charleston, now operate under the Objective plan. The result of the increased use of gas to the point where the lower Objective rate becomes available is shown in table 9 for Mobile and Charleston. This table shows the amount of gas available at each of these rates for the same bills for each of four services.

TABLE 9.—*Amount of Gas Available for Identical Bills Under Immediate and Objective Rates in Mobile and Charleston*

MOBILE, ALA.: NATURAL GAS, 960 B. T. U.

Date and type of service	Net monthly bill	Number of therms		Number of cubic feet	
		Immediate rate	Objective rate	Immediate rate	Objective rate
Jan. 1, 1936:					
Range.....	\$2.25	10.6	12.5	1,100	1,300
Range and manual-type water heater....	3.43	19.6	23.8	2,040	2,480
Range and automatic water heater.....	4.75	30.6	41.6	3,190	4,330
Range, automatic water heater, and refrigerator.....	5.43	40.6	52.4	4,230	5,460

CHARLESTON, S. C.: MANUFACTURED GAS, 550 B. T. U.

May 1, 1937:					
Range.....	2.70	10.6	-----	1,930	(1) 4,310
Range and manual-type water heater....	4.98	19.6	23.7	3,560	7,260
Range and automatic water heater.....	7.19	30.6	39.9	5,560	9,690
Range, automatic water heater, and refrigerator.....	9.01	40.6	53.3	7,380	

¹ Customers using less than 2,700 cubic feet per month are not billed under the Objective rate.

Wholesale Prices

WHOLESALE PRICES IN JUNE 1937

WHOLESALE commodity prices, as measured by the index of 784 price series declined 0.2 percent during June. The decrease, which began in May and continued through June, was largely due to lower prices for farm products. Notwithstanding the recent decline in commodity prices which brought the all-commodity index to 87.2 percent of the 1926 average, the general level was 10.1 percent higher than a year ago and 1.5 percent above that for January 1937.

Besides the farm products group, decreases were also reported in hides and leather products, textile products, building materials, chemicals and drugs, and miscellaneous commodities. Foods, fuel, and lighting materials, metals and metal products, and housefurnishing goods advanced fractionally.

Market prices of raw materials and semimanufactured articles declined during June, but both groups were substantially above their levels of a year ago. Finished product prices continued to rise, reaching the highest level since June 1930.

The index for the large group, "all commodities other than farm products", reflecting the movement in prices of nonagricultural commodities, rose 0.1 percent, and that for "all commodities other than farm products and foods," measuring the change in prices of industrial commodities, fell 0.2 percent.

A comparison of the June level of wholesale commodity prices with May 1937 and June 1936 is shown in table 1.

TABLE 1.—Comparison of Index Numbers of Wholesale Prices for June 1937 With May 1937 and June 1936

[1926=100]

Commodity group	June 1937	May 1937	Change from a month ago	June 1936	Change from a year ago
			Percent		Percent
All commodities.....	87.2	87.4	-0.2	79.2	+10.1
Farm products.....	88.5	89.8	-1.4	78.1	+13.3
Foods.....	84.7	84.2	+0.6	79.9	+6.0
Hides and leather products.....	106.4	106.7	-0.3	93.8	+13.4
Textile products.....	78.2	78.7	-0.6	69.7	+12.2
Fuel and lighting materials.....	77.5	77.2	+0.4	76.1	+1.8

TABLE 1.—Comparison of Index Numbers of Wholesale Prices for June 1937 With May 1937 and June 1936—Continued

Commodity group	June 1937	May 1937	Change from a month ago	June 1936	Change from a year ago
			Percent		Percent
Metals and metal products.....	95.9	95.8	+0.1	86.2	+11.3
Building materials.....	96.9	97.2	-0.3	85.8	+12.9
Chemicals and drugs.....	83.6	84.5	-1.1	78.0	+7.2
Housefurnishing goods.....	89.5	89.3	+0.2	81.4	+10.0
Miscellaneous.....	79.4	80.5	-1.4	69.7	+13.9
Raw materials.....	86.1	87.1	-1.1	77.6	+11.0
Semimanufactured articles.....	86.8	87.5	-0.8	73.9	+17.5
Finished products.....	87.7	87.5	+0.2	80.7	+8.7
All commodities other than farm products.....	86.8	86.7	+0.1	79.4	+9.3
All commodities other than farm products and foods.....	86.1	86.3	-0.2	78.8	+9.3

Wholesale Price Level in June

During June wholesale commodity prices declined 0.2 percent, bringing the all-commodity index to 87.2. The decrease was largely due to weakening prices for farm products although hides and leather products, textile products, building materials, chemicals and drugs, and miscellaneous commodities also declined. Minor increases were recorded in the foods, fuel and lighting materials, metals and metal products, and housefurnishing goods groups. The all-commodity index was 0.9 percent below the year's high reached in April but 10.1 percent above the level of a year ago.

Each of the 10 major commodity groups was above its level of a year ago. The increases ranged from less than 2 percent for fuel and lighting materials to more than 13 percent for farm products, hides and leather products, and miscellaneous commodities.

Fluctuations within the commodity groups that influenced the movement of the all-commodity index during June are shown in table 2.

TABLE 2.—Number of Items Changing in Price From May to June 1937

Commodity group	Increases	Decreases	No change
All commodities.....	152	188	444
Farm products.....	16	45	6
Foods.....	34	58	30
Hides and leather products.....	7	12	22
Textile products.....	10	33	69
Fuel and lighting materials.....	11	4	9
Metals and metal products.....	31	3	96
Building materials.....	10	15	61
Chemicals and drugs.....	17	7	65
Housefurnishing goods.....	8	1	52
Miscellaneous.....	8	10	34

Market prices of nonagricultural commodities, measured by the index for "all commodities other than farm products", advanced 0.1 percent during June (9.3 percent higher than a year ago). The

index for "all commodities other than farm products and foods", marking the trend in prices of industrial commodities, declined 0.2 percent but was 9.3 percent above the index for the corresponding month of last year.

Raw material prices fell 1.1 percent to the lowest point reached this year. They were 4.4 percent below the year's high of March but 11.0 percent higher than in June 1936. The semimanufactured articles group, following the tendency in prices of raw materials, dropped 0.8 percent. The index for this group was, however, 17.5 percent above a year ago. Wholesale prices of finished products continued to advance, attaining the highest level reached in the past seven years. The June index of 87.7 was 8.7 percent above that for the corresponding month of 1936.

The farm products group declined 1.4 percent during June, due primarily to a 7.2-percent decrease in wholesale prices of grains. Pronounced decreases were reported for barley, corn, oats, rye, wheat, sheep, cotton, fresh apples, hay, hops, seeds, dried beans, and sweet-potatoes. The subgroup of livestock and poultry advanced 2.5 percent because of higher quotations for steers and hogs. Prices for lemons, oranges, and onions advanced sharply. Although the farm products group index—88.5—was 6.0 percent below the year's high of March, it was 13.3 percent above a year ago.

Average wholesale prices of cattle feed dropped 16.4 percent during the month. Crude rubber declined 8.1 percent, and paper and pulp decreased 0.4 percent.

The index for the chemicals and drugs group declined 1.1 percent due to lower prices for borax, glycerine, and tankage. Mixed fertilizer prices averaged higher. Quotations on sulphuric acid, denatured alcohol, logwood extract, epsom salts, ammonia sulphate, and ground bones were higher than in May.

Continued declines in prices for cotton goods together with weakening prices for knit goods, raw silk, woolen and worsted goods, and other textile products such as burlap, jute, and cotton twine caused the index for the textile products group to decrease 0.6 percent. The subgroup of clothing advanced 2.2 percent.

Falling prices for hides, skins, and leather caused the hides and leather products group index to decline 0.3 percent. Shoe prices averaged higher, and those for other leather products, such as gloves, belting, harness, and luggage, remained firm.

As a result of lower prices for lumber, chinawood oil, turpentine, and window glass the building materials group declined 0.3 percent. Average wholesale prices for brick and tile, cement, and structural steel remained unchanged.

The wholesale foods group advanced 0.6 percent because of rising prices for meats, cereal products, and fruits and vegetables. Dairy

products and the subgroup of "other foods" declined. Important food items for which higher prices were reported were bread in the New York and Cincinnati markets, canned pineapple and pears, prunes, bananas, canned asparagus, lamb, cured and fresh pork, canned pink salmon, and oleo oil. Lower prices were reported for rye flour, butter, powdered milk, hominy grits, corn meal, rice, canned string beans, mutton, veal, cocoa beans, copra, cured fish, oleomargarine, pepper, and vegetable oils. The June food index—84.7—was 6.0 percent above a year ago.

Advancing prices for anthracite, gas, and petroleum products caused the fuel and lighting materials group to rise 0.4 percent to the highest level reached since November 1930. Coke prices were slightly lower and bituminous coal remained steady.

The index for the housefurnishing goods group rose 0.2 percent, due to advancing prices for furniture. Furnishings remained unchanged at last month's level.

A minor advance—0.1 percent—was registered by the metals and metal products group due to higher prices for agricultural implements. Scrap steel and antimony prices declined. Average wholesale prices for motor vehicles and plumbing and heating fixtures were stationary.

Index numbers for the groups and subgroups of commodities for June and May 1937 and for June of each of the years, 1930 to 1936, are shown in table 3.

TABLE 3.—Index Numbers of Wholesale Prices, by Groups and Subgroups of Commodities

[1926=100]

Group and subgroup	June 1937	May 1937	June 1936	June 1935	June 1934	June 1933	June 1932	June 1931	June 1930
All commodities.....	87.2	87.4	79.2	79.8	74.6	65.0	63.9	72.1	86.8
Farm products.....	88.5	89.8	78.1	78.3	63.3	53.2	45.7	65.4	88.9
Grains.....	105.7	113.9	73.0	76.9	72.4	57.4	37.7	56.0	78.7
Livestock and poultry.....	98.3	95.9	83.2	84.8	48.3	46.6	46.7	61.9	88.5
Other farm products.....	77.4	79.0	75.8	74.3	69.4	56.2	48.2	70.8	92.7
Foods.....	84.7	84.2	79.9	82.8	69.8	61.2	58.8	73.3	90.8
Dairy products.....	72.0	73.1	77.6	74.6	73.0	63.1	57.4	78.8	90.2
Cereal products.....	90.4	88.7	81.6	90.5	89.2	70.7	66.8	74.3	82.9
Fruits and vegetables.....	84.5	84.1	82.0	68.7	70.1	63.9	62.4	76.4	109.0
Meats.....	98.0	95.9	85.1	94.5	62.2	52.4	56.0	71.3	99.9
Other foods.....	74.3	75.2	72.3	77.2	62.8	61.1	55.4	68.5	78.1
Hides and leather products.....	106.4	106.7	93.8	88.9	87.1	82.4	70.8	88.0	102.4
Shoes.....	107.5	106.1	99.7	97.3	98.4	85.5	87.5	94.6	103.0
Hides and skins.....	114.6	117.7	89.0	78.0	70.1	81.4	32.5	65.5	99.0
Leather.....	98.8	100.6	83.2	80.5	75.3	74.3	58.7	87.8	102.9
Other leather products.....	102.3	102.3	95.4	84.4	86.8	78.5	96.4	101.4	105.5
Textile products.....	78.2	78.7	69.7	70.1	72.7	61.5	52.7	66.6	81.6
Clothing.....	89.1	87.2	80.9	80.7	82.6	64.5	62.2	76.3	86.7
Cotton goods.....	89.7	92.6	75.4	82.5	86.0	67.1	51.0	67.6	87.2
Knit goods.....	64.6	65.7	60.3	59.5	62.8	50.9	49.6	59.8	81.8
Silk and rayon.....	32.5	32.5	29.3	27.2	25.0	35.2	27.5	41.9	60.5
Woolen and worsted goods.....	93.2	93.3	82.6	75.6	80.8	68.8	55.0	68.0	79.7
Other textile products.....	67.5	68.9	66.9	68.9	74.8	73.6	66.7	75.5	86.2

TABLE 3.—Index Numbers of Wholesale Prices, by Groups and Subgroups of Commodities—Continued

[1926 = 100]

Group and subgroup	June 1937	May 1937	June 1936	June 1935	June 1934	June 1933	June 1932	June 1931	June 1930
Fuel and lighting materials.....	77.5	77.2	76.1	74.2	72.8	61.5	71.6	62.9	78.9
Anthracite.....	74.5	74.2	77.0	74.0	76.9	76.8	85.3	88.8	85.8
Bituminous coal.....	98.5	98.5	96.5	96.1	95.0	78.3	81.8	83.2	88.6
Coke.....	105.0	105.1	93.7	88.7	85.0	75.3	76.9	81.5	84.0
Electricity.....	(1)	(1)	83.4	90.2	90.6	91.4	105.5	98.6	97.5
Gas.....	(1)	83.0	88.0	95.2	97.5	101.7	106.3	101.9	99.7
Petroleum products.....	61.5	60.9	57.7	53.2	50.6	34.4	48.2	30.7	63.6
Metals and metal products.....	95.9	95.8	86.2	86.9	87.7	79.3	79.9	84.4	91.9
Agricultural implements.....	94.1	93.8	94.2	93.6	91.1	83.0	84.9	94.2	94.5
Iron and steel.....	99.7	99.6	86.3	87.1	88.6	76.2	79.8	83.5	89.0
Motor vehicles.....	93.7	93.7	92.9	94.7	95.0	90.4	93.8	94.2	100.8
Nonferrous metals.....	91.9	91.7	70.0	69.1	68.5	63.2	47.5	61.2	79.8
Plumbing and heating.....	78.7	78.7	73.8	66.2	75.1	67.4	66.7	86.6	88.3
Building materials.....	96.9	97.2	85.8	85.3	87.8	74.7	70.8	79.3	89.9
Brick and tile.....	95.0	95.0	89.2	89.2	91.1	77.0	76.1	83.7	88.5
Cement.....	95.5	95.5	95.5	94.9	93.9	81.8	77.1	77.7	91.7
Lumber.....	102.2	103.0	82.1	81.6	86.3	67.4	57.6	68.5	85.6
Paint and paint materials.....	83.6	83.7	79.5	79.8	80.3	71.9	73.3	80.0	92.4
Plumbing and heating.....	78.7	78.7	73.8	66.2	75.1	67.4	66.7	86.6	88.3
Structural steel.....	114.9	114.9	92.5	92.0	94.5	81.7	81.7	84.3	86.8
Other building materials.....	101.1	101.3	90.1	90.0	92.0	80.6	77.6	85.4	93.0
Chemicals and drugs.....	83.6	84.5	78.0	80.7	75.6	73.7	73.1	79.4	89.4
Chemicals.....	90.1	91.1	84.3	86.3	78.6	81.5	78.6	82.5	94.0
Drugs and pharmaceuticals.....	78.0	79.2	73.2	74.3	73.1	55.5	58.3	62.6	68.5
Fertilizer materials.....	70.5	70.6	64.0	65.7	67.9	68.0	68.0	79.8	85.3
Mixed fertilizers.....	72.3	72.2	66.0	74.5	73.4	63.0	69.0	82.4	94.1
Housefurnishing goods.....	89.5	89.3	81.4	80.5	82.0	73.4	74.7	86.4	93.4
Furnishings.....	92.5	92.5	85.2	83.9	85.1	73.6	75.4	83.4	92.3
Furniture.....	86.6	86.1	77.5	77.1	79.0	73.4	74.0	89.8	94.6
Miscellaneous.....	79.4	80.5	69.7	68.4	70.2	60.8	64.2	69.7	78.4
Automobile tires and tubes.....	56.4	56.4	47.5	45.0	44.6	40.1	39.6	46.0	50.3
Cattle feed.....	116.9	139.9	80.7	92.2	86.9	55.8	42.1	61.1	102.0
Paper and pulp.....	95.0	94.6	80.6	79.7	83.5	73.5	76.2	80.7	86.4
Rubber, crude.....	41.0	44.6	33.0	26.0	27.7	12.6	5.8	13.3	25.9
Other miscellaneous.....	85.8	85.5	80.8	80.1	83.1	75.0	84.6	88.2	96.9
Raw materials.....	86.1	87.1	77.6	76.4	67.3	56.2	53.2	64.7	84.9
Semimanufactured articles.....	86.8	87.5	73.9	73.9	72.9	65.3	57.6	69.3	81.7
Finished products.....	87.7	87.5	80.7	82.2	78.2	69.0	70.0	76.0	88.4
All commodities other than farm products.....	86.8	86.7	79.4	80.0	76.9	67.4	67.8	73.4	86.3
All commodities other than farm products and foods.....	86.1	86.3	78.8	78.0	78.2	68.9	70.1	74.1	85.7

¹ Data not yet available.*Index Numbers of Wholesale Prices by Commodity Groups*

Index numbers of wholesale prices by commodity groups, by years from 1926 to 1936, inclusive, and by months from January 1936 to June 1937, inclusive, are shown in table 4.

TABLE 4.—Index Numbers of Wholesale Prices, by Groups of Commodities

[1926=100]

Year and month	Farm products	Foods	Hides and leather products	Textile products	Fuel and lighting	Metals and metal products	Building materials	Chemicals and drugs	House-furnishing goods	Miscellaneous	All commodities
By years:											
1926	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1927	99.4	96.7	107.7	95.6	88.3	96.3	94.7	96.8	97.5	91.0	95.4
1928	105.9	101.0	121.4	95.5	84.3	97.0	94.1	95.6	95.1	85.4	96.7
1929	104.9	99.9	109.1	90.4	83.0	100.5	95.4	94.2	94.3	82.6	95.3
1930	88.3	90.5	100.0	80.3	78.5	92.1	89.9	89.1	92.7	77.7	86.4
1931	64.8	74.6	86.1	66.3	67.5	84.5	79.2	79.3	84.9	69.8	73.0
1932	48.2	61.0	72.9	54.9	70.3	80.2	71.4	73.5	75.1	64.4	64.8
1933	51.4	60.5	80.9	64.8	66.3	79.8	77.0	72.6	75.8	62.5	65.9
1934	65.3	70.5	86.6	72.9	73.3	86.9	86.2	75.9	81.5	69.7	74.9
1935	78.8	83.7	89.6	70.9	73.5	86.4	85.3	80.5	80.6	68.3	80.0
1936	80.9	82.1	95.4	71.5	76.2	87.0	86.7	80.4	81.7	70.5	80.8
By months:											
1936:											
January	78.2	83.5	97.1	71.7	75.1	86.7	85.7	80.5	81.4	67.8	80.6
February	79.5	83.2	96.1	71.0	76.1	86.7	85.5	80.1	81.5	68.1	80.6
March	76.5	80.1	94.9	70.8	76.2	86.6	85.3	79.3	81.4	68.3	79.6
April	76.9	80.2	94.6	70.2	76.4	86.6	85.7	78.5	81.5	68.6	79.7
May	75.2	78.0	94.0	69.8	76.0	86.3	85.8	77.7	81.5	69.2	78.6
June	78.1	79.9	93.8	69.7	76.1	86.2	85.8	78.0	81.4	69.7	79.2
July	81.3	81.4	93.4	70.5	76.2	86.9	86.7	79.4	81.2	71.0	80.5
August	83.8	83.1	93.6	70.9	76.3	87.1	86.9	79.8	81.4	71.5	81.6
September	84.0	83.3	94.6	70.9	76.1	86.8	87.1	81.7	81.7	71.3	81.6
October	84.0	82.6	95.6	71.6	76.8	86.9	87.3	82.2	82.0	71.5	81.5
November	85.1	83.9	97.0	73.5	76.8	87.9	87.7	82.5	82.3	73.4	82.4
December	88.5	85.5	99.7	76.3	76.5	89.6	89.5	85.3	83.2	74.5	84.2
1937:											
January	91.3	87.1	101.7	77.5	76.6	90.9	91.3	87.7	86.5	76.2	85.9
February	91.4	87.0	102.7	77.5	76.8	91.7	93.3	87.8	87.9	77.3	86.3
March	94.1	87.5	104.2	78.3	76.2	96.0	95.9	87.5	88.4	79.5	87.8
April	92.2	85.5	106.3	79.5	76.8	96.5	96.7	86.9	89.0	81.1	88.0
May	89.8	84.2	106.7	78.7	77.2	95.8	97.2	84.5	89.3	80.5	87.4
June	88.5	84.7	106.4	78.2	77.5	95.9	96.9	83.6	89.5	79.4	87.2

TABLE 5.—Index Numbers of Wholesale Prices by Special Groups of Commodities

[1926=100]

Year and month	Raw materials	Semi-manufactured articles	Finished products	All commodities other than farm products and foods	All commodities
1926	100.0	100.0	100.0	100.0	100.0
1927	96.5	94.3	95.0	94.6	94.0
1928	99.1	94.5	95.9	94.8	92.9
1929	97.5	93.9	94.5	93.3	91.6
1930	84.3	81.8	88.0	85.9	85.2
1931	65.6	69.0	77.0	74.6	75.0
1932	55.1	59.3	70.3	68.3	70.2
1933	56.5	65.4	70.5	69.0	71.2
1934	68.6	72.8	78.2	76.9	78.4
1935	77.1	73.6	82.2	80.2	77.9
1936	79.9	75.9	82.0	80.7	79.6
1936:					
January	78.1	74.8	82.4	80.9	78.8
February	79.1	74.6	82.2	80.7	79.0
March	77.4	74.4	81.3	80.2	78.9
April	77.0	74.5	81.6	80.1	78.9
1936—Continued.					
May	75.8	74.1	80.5	79.2	78.8
June	77.6	73.9	80.7	79.4	78.8
July	79.8	75.2	81.6	80.3	79.5
August	81.5	75.6	82.4	80.9	79.7
September	81.8	75.9	82.3	80.9	79.6
October	82.1	76.2	82.0	80.9	80.1
November	83.1	78.6	82.6	81.7	81.0
December	85.6	82.3	83.8	83.1	82.2
1937:					
January	88.1	85.4	84.9	84.6	83.4
February	88.3	85.5	85.4	85.0	84.1
March	90.1	89.6	86.4	86.3	85.5
April	88.7	89.5	87.4	86.9	86.5
May	87.1	87.5	87.5	86.7	86.3
June	86.1	86.8	87.7	86.8	86.1

The price trend since 1926 is shown in table 5 for the following groups of commodities: Raw materials, semimanufactured articles, finished products, commodities other than farm products, and commodities other than farm products and foods. The list of commodities included under the classifications "raw materials", "semimanufactured articles", and "finished products" was given in the October 1934 issue of the Wholesale Prices pamphlet.

Weekly Fluctuations

The wholesale price all-commodity index declined steadily during the first half of June, due principally to sharp decreases in wholesale prices of farm products, together with lower prices for foods, textile products, chemicals and drugs, and miscellaneous commodities including cattle feed and crude rubber.

During the period June 19 to 26 pronounced upturns in prices of farm products and foods caused the all-commodity index to rise over 0.2 percent. Despite the upward tendency during the latter part of June, the all-commodity index registered a net decrease of 0.8 percent between May 29 and June 26. Farm products declined 2.9 percent during this period; miscellaneous commodities, 2.0 percent; chemicals and drugs, 0.7 percent; and foods and textile products, 0.6 percent.

Variations in prices in the group classifications during June are shown by the weekly index numbers in table 6. The percentage changes from week to week in the groups are given in table 7.

TABLE 6.—Weekly Index Numbers of Wholesale Prices, by Commodity Groups, May and June 1937

[1926=100]

Commodity group	June 26, 1937	June 19, 1937	June 12, 1937	June 5, 1937	May 29, 1937	May 22, 1937	May 15, 1937	May 8, 1937	May 1, 1937
All commodities.....	86.7	85.5	86.7	87.1	87.4	87.4	86.9	87.3	87.4
Farm products.....	88.4	87.4	88.0	89.3	91.0	91.2	89.3	91.0	91.5
Foods.....	84.4	84.0	84.5	84.8	84.9	85.1	84.2	84.7	85.2
Hides and leather products.....	106.8	107.2	107.6	107.6	107.0	107.1	107.6	107.7	106.8
Textile products.....	77.4	77.3	77.4	77.6	77.9	78.1	78.2	78.3	78.6
Fuel and lighting materials.....	78.2	78.1	78.1	78.2	78.2	78.2	78.2	78.2	77.9
Metals and metal products.....	95.1	95.1	95.1	95.1	95.1	95.0	95.0	94.8	95.1
Building materials.....	96.9	97.0	97.0	97.0	97.2	96.9	96.9	96.8	96.6
Chemicals and drugs.....	83.0	83.5	83.4	83.3	83.6	83.5	83.9	84.4	85.2
Housefurnishing goods.....	91.0	91.0	91.0	91.0	90.9	90.8	90.8	90.8	90.8
Miscellaneous.....	78.6	79.2	79.4	80.0	80.2	80.5	80.4	80.4	80.6
Raw materials.....	85.8	85.3	85.6	86.5	87.4	87.7	86.6	87.8	88.1
Semimanufactured articles.....	86.5	86.6	86.8	86.9	87.1	87.2	87.4	87.7	88.4
Finished products.....	87.5	87.5	87.6	87.8	87.9	87.7	87.3	87.4	87.4
All commodities other than farm products.....	86.3	86.4	86.4	86.6	86.7	86.5	86.3	86.4	86.5
All commodities other than farm products and foods.....	85.9	85.9	86.0	86.2	86.3	86.3	86.3	86.3	86.3

TABLE 7.—Weekly Changes (Percent) During June 1937, by Groups of Commodities

Commodity group	Percentage change from—				
	May 29 to June 26	June 19 to June 26	June 12 to June 19	June 5 to June 12	May 29 to June 5
All commodities.....	-0.8	+0.2	-0.2	-0.5	-0.3
Farm products.....	-2.9	+1.1	-7	-1.5	-1.9
Foods.....	-6	+5	-6	-4	-1
Hides and leather products.....	-2	-4	-4	0.0	+6
Textile products.....	-6	+1	-1	-3	-4
Fuel and lighting materials.....	0.0	+1	0.0	-1	0.0
Metals and metal products.....	0.0	0.0	0.0	0.0	0.0
Building materials.....	-3	-1	0.0	0.0	-2
Chemicals and drugs.....	-7	-6	+1	+1	-4
Housefurnishing goods.....	+1	0.0	0.0	0.0	+1
Miscellaneous.....	-2.0	-8	-3	-7	-2
Raw materials.....	-1.8	+6	-4	-1.0	-1.0
Semimanufactured articles.....	-7	-1	-2	-1	-2
Finished products.....	-5	0.0	-1	-2	-1
All commodities other than farm products.....	-5	-1	0.0	-2	-1
All commodities other than farm products and foods.....	-5	0.0	-1	-2	-1

Monthly Average Wholesale Prices and Index Numbers of Individual Commodities

The table showing monthly average wholesale prices and index numbers of individual commodities formerly appearing in the Wholesale Prices pamphlet is now published semiannually instead of monthly. The June 1937 issue showed the average for the year 1936 and information for the first 6 months of 1937. The monthly figures will be furnished upon request.

May 1, 1937	
87.4	
91.5	
85.2	
106.8	
78.6	
77.9	
95.1	
96.6	
85.2	
90.8	
80.6	
88.1	
88.4	
87.4	
86.5	
86.3	

Recent Publications of Labor Interest

JULY 1937

Child Labor

Control of child labor. By Bryant Putney. Washington, Editorial Research Reports (Vol. 1, 1937, No. 20), 1013 Thirteenth Street, NW., 1937. 18 pp.

A brief summary of recent data on the extent and character of child labor, with special emphasis on the employment of children in agriculture, and a review of actual and proposed statutory regulations by Federal and State governments.

Factors affecting an 18-year minimum age for employment of girls in cotton-textile manufacturing under the Public Contracts Act. Washington, U. S. Children's Bureau, 1936. 26 pp.; mimeographed.

Cooperative Movement

Cooperative enterprise. By Jacob Baker. New York, Vanguard Press, 1937. 266 pp.

Describes the cooperative association, how it works and what it does, its relations with other parts of the community, and its probable development in the future. The book is drawn largely from the author's observations of the working of the cooperative movement in the United States and from his experiences as chairman of the President's Commission on Cooperative Enterprise sent abroad in August 1936 to study cooperatives in Europe. Contains considerable factual material on the eight countries visited by the Commission.

Consumers' cooperatives. By Edgar Schmiedeler. New York, Paulist Press, 1937. 29 pp. (National Catholic Welfare Conference, Social Action Series No. 5.)

Advocates the formation of cooperative associations, on the ground of their possibilities of financial savings for the members, their effect as stabilizers of retail prices, and their social values.

Consumers' cooperation in Minnesota. By Russel Lewis, Mauritz Seashore, and others. St. Paul, Minnesota Department of Agriculture, Dairy, and Food, 1937. 113 pp., charts; mimeographed.

Described as "a first attempt to summarize the history and present status of the entire consumer-cooperative movement in Minnesota." Individual chapters deal with cooperative stores; oil associations; farm-supply associations; credit unions; mutual and cooperative insurance; telephone, electric power, trucking, and burial associations; and miscellaneous types of societies.

Sixty-eighth annual cooperative congress, Newcastle upon Tyne, June 1-3, 1936. Manchester, England, Cooperative Union, Ltd., 1936. 775 pp.

Besides the proceedings of the congress, the volume contains a wealth of information on various phases of the cooperative movement in Great Britain, such as the National Cooperative Authority, International Cooperative Alliance, the co-operative press, and statistics of the societies.

Tenth annual report of Palestine Economic Corporation, for 1936. New York, 40 Exchange Place, [1937?]. 47 pp.

Contains data on cooperative associations in Palestine and on credit for various types of associations.

Fourth annual report of Farm Credit Administration, 1936. Washington, 1937. 215 pp., maps, charts.

Information is included on activities of production credit associations and banks for agricultural cooperatives.

Year book of agricultural cooperation, 1937. Edited by Horace Plunkett Foundation. London, P. S. King & Son, Ltd., 1937. 583 pp.

A collection of reports on agricultural cooperation in various countries, by different authors, with a detailed bibliography on the general subject.

A primer of facts about cooperative medicine. New York, Bureau of Cooperative Medicine [Cooperative League of the U. S. A.], 5 East 57th Street, [1937?]. 13 pp.

Next steps forward in retailing. By Edward A. Filene and others. New York, Harper & Bros., 1937. xvi, 309 pp.

Includes data on methods and procedures of the so-called "cooperative" or voluntary chains of independent retail dealers, and describes a plan for organization of a league of cooperative department stores such as the Consumer Distribution Corporation, New York City, is planning to organize.

Credit unions in Minnesota. By Russel Lewis and Clyde Buell. Minneapolis, Minn., Credit Union League and Minnesota Department of Agriculture, Dairy, and Food, 1937. 127 pp., charts; mimeographed.

Gives data on history, types, business operations, central organizations, and legal status of credit unions, with an analysis of loans made by specified societies, all with special reference to Minnesota.

Cooperativas escolares. By Santiago Hernández Ruiz. Bogotá, Colombia, Dirección de Educación de Cundinamarca, [1937?]. 232 pp.

Defines and gives historical account of school cooperatives with discussion of aims and organization, and provides sample constitutions of school cooperatives for pupils in actual attendance, for former pupils, and for parents and friends of the pupils in these two groups.

Cost of Living

Clothing budgets for (1) family of an executive, (2) family of a clerk, (3) family of a wage earner, (4) dependent families or children; prices for San Francisco, October 1936. Berkeley, Calif., University of California, Heller Committee for Research in Social Economics, 1937. 27 pp.; mimeographed. (Supplement to Quantity and Cost Budgets, October 1936.)

Measurement of cost of living in Toledo. Toledo, Ohio, University of Toledo, Bureau of Business Research, 1937. 20 pp., charts; mimeographed. (Bulletin No. 7.)

The unemployed, their income and expenditure. By Elizabeth W. Gilboy. (In American Economic Review, Menasha, Wis., June 1937, pp. 309-323.)

The study is based on a sample of applicants to the Cambridge, Mass., Emergency Relief Administration and of recipients of relief in four other towns of Massachusetts. Expenditures were found to exceed income consistently by 15 or 20 percent, the difference being met by the use of savings where possible, but being represented to a large extent by unpaid bills.

Economic and Social Problems

The backward art of spending money, and other essays. By Wesley C. Mitchell. New York, McGraw-Hill Book Co., Inc., 1937. 421 pp.

In these essays, outstanding historical and contemporary trends in economic thought and research are discussed and criticized. Probably the essays of most immediate interest in connection with labor are those on the organization of social-science research and on social science in relation to national planning.

The problems and practice of economic planning. By Raymond Burrows. London, P. S. King & Son, Ltd., 1937. 280 pp.

The author, a lecturer on economics in the University of Bristol, discusses the theory of planning, analyzes some of the mechanisms available for directing the course of economic activity, and describes recent tendencies in the direction of planning in various countries, with emphasis on Great Britain.

The science of social adjustment. By Sir Josiah Stamp. London, Macmillan & Co., Ltd., 1937. 174 pp.

Public addresses, adapted to publication, dealing mainly with the problems arising from the impacts of science on society, especially in speeding up the rate of change. Subjects also considered are eugenics and the changing rates of population growth; the measurement and control of productive capacity for the realization of an economy of plenty; and research as an instrument of social adjustment.

Some social aspects of present and future economic development in Brazil. By Fernand Maurette. Geneva, Switzerland, International Labor Office (American branch, 734 Jackson Place, Washington, D. C.), 1937. 99 pp. (Studies and Reports, Series B, No. 25.)

A study of working conditions and supply of labor in Brazilian industry and agriculture, with suggested remedies for scarcity of agricultural labor.

Federal subsidies to the provincial governments in Canada. By J. A. Maxwell. Cambridge, Harvard University Press, 1937. 284 pp.

Discusses the development of a Canadian policy of Government subsidy somewhat similar to that of the United States Government in making grants to States for various purposes. Canadian practice has included the granting of conditional subsidies for such activities as education, road building, public health, old-age pensions, and maintenance of employment offices.

Public enterprise: Developments in social ownership and control in Great Britain. Edited for the New Fabian Research Bureau by William A. Robson. London, George Allen & Unwin, Ltd., 1937. 416 pp.

Studies of recent developments of exceptional significance in the field of public boards and commissions for operating public utilities and for organizing or regulating important branches of industry. The agencies studied include the Port of London Authority, the British Broadcasting Corporation, the Central Electricity Board, the Coal Mines Reorganization Commission, and several others. There is also a chapter on the cooperative movement and a chapter giving general conclusions.

I 10 anni della carta del lavoro. Rome, Confederazione Fascista dei Lavoratori dell'Industria, 1937. 601 pp.

Text of the labor charter adopted in Italy in 1927, an exposition by various authors of the principles of fascist syndical and corporative organization, and selected statistics of the operation of fascist theory in relation to labor problems, during 10 years. A bibliography is included.

Population pressure and economic life in Japan. By Ryoichi Ishii. London, P. S. King & Son, Ltd., 1937. 259 pp.

Deals with the origin and present status of the population problem of Japan, and relates the findings to the economic and political conditions of the Empire. Occupational distribution, the small-farming system, the food supply, colonization, immigration, and industrialization as a remedial measure, are included in the subjects discussed.

The second 5-year plan for the development of the national economy of the U. S. S. R. (1933-37). Moscow, State Planning Commission of the U. S. S. R. (New York, International Publishers), [1936?]. 671 pp. (In English.)

Education

Rural adult education, 1930-36. Two chapters from "Rural trends in depression years," by Edmund deS. Brunner and Irving Lorge. New York, Columbia University Press, 1937. 72 pp. (Reprinted for American Association for Adult Education.)

In the judgment of the authors, the record set down in this pamphlet shows that notwithstanding the depression substantial progress has been made in rural adult education since 1930.

Statement of policies for the administration of vocational education. Washington, U. S. Office of Education, 1937. 137 pp. Revised ed. (Vocational Education Bulletin No. 1, General Series No. 1.)

Technical education—an immediate program. By Barbara Drake and Tobias Weaver. London, New Fabian Research Bureau, 37 Great James Street, W. C. 1, 1936. 36 pp. (Publication No. 27.)

Gives data on types of technical schools and the relations of these institutions with industry, and outlines a secondary education scheme to serve as a basis for a stable system of technical training in Great Britain.

Employment and Unemployment

Indirect labor requirements in construction of houses by the T. V. A. By Bernard H. Topkis and H. O. Rogers. Washington, U. S. Bureau of Labor Statistics, 1937. 13 pp., plans, illus. (Serial No. R. 577, reprint from June 1937 Monthly Labor Review.)

Nonagricultural employment in the United States, March 1937. Washington, U. S. Bureau of Labor Statistics, 1937. 2 pp. (Serial No. R. 578, reprint from June 1937 Monthly Labor Review.)

Small-scale placer mines as a source of gold, employment, and livelihood in 1935. By Charles White Merrill, Charles W. Henderson, and O. E. Kiessling. Washington, U. S. Works Progress Administration, 1937. 52 pp., charts, illus. (Mineral Technology and Output per Man Studies, Report No. E-2.)

The second in the series of Mineral Technology and Output per Man Studies conducted under a cooperative arrangement between the National Research Project of the W. P. A. and the U. S. Bureau of Mines. An article based on the report is published in this issue of the Monthly Labor Review.

Trade revival in a depressed area. By D. Caradog Jones. Liverpool, England, University Press of Liverpool, 1937. 72 pp.

This statistical analysis of trade conditions, employment, and unemployment in the Merseyside area (Liverpool), between 1934 and 1936, is intended to keep up to date the information on outstanding trends developed by the extensive social survey of the area, results of which were published in 1934.

Essays in the theory of employment. By Joan Robinson. London, Macmillan & Co., Ltd., 1937. 255 pp.

A selection of essays which for the most part are interpretations and applications of J. M. Keynes' General Theory of Employment, Interest, and Money. The author holds that many forms of work commonly described as employment are economically in reality disguised unemployment, so that the usual gross figures of employment and unemployment need to be subjected to careful analysis. There is a discussion of the conditions required for full employment.

Employment Offices

Oslo arbeidskontor, 1936. Oslo, Arbeidskontor, 1937. 27 pp., charts.

Annual report of the Oslo city employment service for 1936, including data on unemployment, jobs vacant and filled, and operation of the psychotechnical institute established in connection with the employment service.

Health and Industrial Hygiene

The concept of social medicine, as presented by physicians and other writers in Germany, 1779-1932. By Gertrud Kroeger. Chicago, Julius Rosenwald Fund, 1937. 40 pp.

From a survey of the writings of physicians in Germany over a century and a half, the high points of their respective philosophies on social medicine have been brought together in this pamphlet.

Annual report of the Government Mining Engineer, Union of South Africa, for the calendar year ended December 31, 1936. Pretoria, Department of Mines, 1937. Various paging, charts.

A section of the report deals with the incidence of silicosis (miners' phthisis) among the European and non-European groups of gold miners in South Africa.

Housing

Fourth annual report of the Federal Home Loan Bank Board, for the period July 1, 1935, through June 30, 1936. Washington, 1937. 144 pp.

Covers operations of the Federal Home Loan Banks, Savings and Loan Division, Home Owners' Loan Corporation, and Federal Savings and Loan Insurance Corporation.

Housing under the Resettlement Administration. Washington, U. S. Bureau of Labor Statistics, 1937. 14 pp., plans, illus. (Serial No. R. 576, reprint from June 1937 Monthly Labor Review.)

Immigration

Immigration and its restriction in the United States—a selected list of recent writings.

Compiled by Anne L. Baden. Washington, U. S. Library of Congress, Division of Bibliography, 1937. 86 pp.; mimeographed.

Income

Income received in the various States, 1929-1935. By John A. Slaughter. New York, National Industrial Conference Board, Inc., 247 Park Avenue, 1937. 167 pp., maps, charts. (Study No. 234.)

Goes beyond the work of the U. S. Bureau of Foreign and Domestic Commerce in attempting to analyze the distribution of "production" income by States. One chapter deals with the distribution of "production" income by types as well as by States, and compares salaries and wages, combined, with other types of income.

National income gain in 1936 largest of recovery period. Washington, U. S. Bureau of Foreign and Domestic Commerce, Division of Economic Research, 1937. 7 pp., charts. (Reprint from Survey of Current Business, June 1937.)

Reviewed in this issue.

Nonagricultural income as a measure of domestic demand. By L. H. Bean, P. H. Bollinger, and O. V. Wells. Washington, U. S. Agricultural Adjustment Administration, 1937. 45 pp., charts.

This contribution to the study of income is described in the pamphlet as intended to make more generally available the monthly index of nonfarm income used by the Department of Agriculture in the study of the prices of farm products and of the demand for these products. Nonfarm income is analyzed as labor income, entrepreneurial income, and property income. There are also estimates of the income of farmers. Estimates extend back as far as 1919 and include monthly figures from 1924 to May 1937.

Industrial Accidents and Workmen's Compensation

Duration and cost of Federal compensation cases with disease as a complicating factor. By William M. Gafafer. Washington, U. S. Public Health Service, 1937. 12 pp. (Reprint No. 1788 from Public Health Reports, Dec. 11, 1936.)

The estimated number of employees coming under the Federal compensation law, up to and including 1935, was between 900,000 and 1,000,000.

Further study of the duration and cost of Federal compensation cases with disease as a complicating factor, cases classified into accidental injuries, occupational diseases, and hernias. By William M. Gafafer. Washington, U. S. Public Health Service, 1937. 16 pp. (Reprint No. 1795 from Public Health Reports, Jan. 8, 1937.)

Biennial report of the Industrial Commission of Wisconsin, 1934-1936. Madison, 1937. 101 pp.

Includes reports of the Commission's activities in connection with unemployment compensation, safety and sanitation, workmen's compensation, employment service, and woman and child labor, for the biennium ended June 30, 1936.

During the calendar year 1934 the number of injury claims settled under the workmen's compensation act was 17,181, which increased to 18,872 during 1935. The act covers some 700,000 employees. Compensation and medical awards increased from \$3,496,796 in 1934 to \$3,602,261 in 1935.

Workmen's compensation in Canada: A comparison of Provincial laws in 1936. Ottawa, Department of Labor, 1936. 23 pp.; mimeographed.

Covers the main points of the Provincial legislation, and summarizes the provisions of the conventions and recommendations of the International Labor Conference as to workmen's compensation for industrial accidents and diseases and as to equality of treatment for national and foreign workers as regards compensation.

Annual report of Manitoba Workmen's Compensation Board, 1936. Winnipeg, 1937. 36 pp.

Compensation amounting to \$448,380.22 is shown to have been paid in 1935, covering 21 deaths, 210 permanent-disability cases, 3,732 cases of temporary disability of over 3 days' duration, and 4,274 injuries which required medical aid only.

Report of Workmen's Compensation Board of Nova Scotia, 1936. Halifax, 1937. 37 pp.

The estimated total cost of all accidents for 1936 was \$1,382,091.42, of which \$1,213,682.66 was for compensation and pension awards, and \$168,408.76 for medical aid. The 9,177 compensable accident cases reported as adjusted included 42 fatalities, 247 cases of permanent partial disability, and 6,757 cases of total disability for 7 days or over; 2,131 cases involved only medical aid. In addition, 567 accidents, including 7 fatalities, were pending adjustment. Data for 1935 are also given in the report.

Seventh annual report of the Workmen's Compensation Board, Saskatchewan, for the calendar year 1936. Regina, 1937. 24 pp.

In 1936 compensation and medical awards totaled \$405,978.86. Payments were made for 3,997 reported accidents, of which 14 resulted fatally, 46 in permanent disability, and 2,280 in temporary disability; 1,657 involved only medical aid. The report includes data for 1935.

Sjømannstrygden 1934; fiskertrygden, 1934. Oslo, Rikstrygdeverket, 1937. 34 and 18 pp.

Annual reports on operation of the accident-insurance systems for seamen and fishermen, respectively, in Norway, in 1934. French translations of the tables of contents and table heads are supplied.

Report on investigation of explosion at Consolidated School, New London, Tex., March 18, 1937. Prepared by David J. Price. Washington, 1937. 13 pp., illus. (Senate Doc. No. 56, 75th Cong., 1st sess.)

Safety principles in mines: A book for young mining students. By F. C. Moore. Sheffield, England, Basil Blackwell, 1936. 86 pp., diagrams, illus.

Covers potential accidents on the way to and from work, use of safety appliances, first-aid, lighting, and general precautions.

Industrial Relations

Company unions—a study outline with special reference to the I. L. G. W. U. New York, International Ladies' Garment Workers' Union, Educational Department, 1937. 43 pp.; mimeographed.

A brief analysis of the structure and functions of company unions, with a description of some of the most prevalent types, a history of the movement, and the experience of the International Ladies' Garment Workers' Union with company unions in the women's garment industry. A selected list of references on the general subject of company unions is included.

The story of the General Motors strike. Submitted to stockholders by Alfred P. Sloan, Jr., president, General Motors Corporation. New York, 1937. 13 pp.

A labor relations program. By P. W. Litchfield. Washington, [Chamber of Commerce of the United States?], 1937. 19 pp.; mimeographed.

Paper presented at the annual meeting, April 28, 1937, of the Chamber of Commerce.

Report of the committee on employment relations, National Association of Manufacturers. New York, 11 West 42d Street, [1937?]. 5 pp.

It is the belief of the Association's committee on employment relations that the application of the basic principles set forth in this report will result in satisfactory employer-employee relations. These principles relate to wages; hours; working conditions; promotion, discharge, and hiring policies; protection against risks; etc.

Labor Legislation

Legislation governing trade marks of trade-unions. Washington, U. S. Bureau of Labor Statistics, 1937. 4 pp. (Serial No. R. 581, reprint from June 1937 Monthly Labor Review.)

Legislative provisions on Sunday labor. Washington, U. S. Bureau of Labor Statistics, 1937. 7 pp. (Serial No. R. 580, reprint from June 1937 Monthly Labor Review.)

National Labor Relations Act declared constitutional. Washington, U. S. Bureau of Labor Statistics, 1937. 5 pp. (Serial No. R. 564, reprint from May 1937 Monthly Labor Review.)

Legislación social de Cuba. Compiled and annotated by José R. García Pedrosa. Habana, Biblioteca de la Revista Cubana de Derecho. Vols. I and II, 1936, 699 and 715 pp.; appendix (of 1936), 1937, 589 pp.

Annotated compilation of social and labor legislation adopted in Cuba up to the end of 1936.

Labor Organization

Should labor unions be regulated? (In Social Action, organ of Council for Social Action, 289 Fourth Avenue, New York, May 15, 1937, pp. 3-17.)

Migratory Labor

The migratory-casual worker. By John N. Webb. Washington, U. S. Works Progress Administration, Division of Social Research, 1937. 128 pp., maps, charts. (Research Monograph VII.)

According to this study, the migratory-casual worker is the result, first, of the progression of the seasons, which leads to irregularity of employment over a large area; and, second, of the unemployment pool which rises and falls with the conditions of business but never entirely disappears. The workers covered by this survey averaged 24 weeks of employment in their migratory period in 1933 and 21 weeks in 1934.

Minimum Wage

Ley de salario minimo para mujeres trabajadoras. San Juan, Puerto Rico, Departamento del Trabajo, 1937. 12 pp.

An interpretation of and commentary upon the Puerto Rican minimum-wage law for women, in the light of decisions rendered through March 1937 by the Supreme Courts of Puerto Rico and the United States.

Mining Industry

Fifteenth annual report of the Secretary for Mines, Great Britain, for the year ended December 31, 1935, and the twenty-eighth annual report of H. M. Chief Inspector of Mines. London, Mines Department, 1936. 252 pp., map.

The report contains data on wages, hours of labor, the miners' welfare fund, and provisions for health and safety in mines.

Forty-seventh annual report of Transvaal Chamber of Mines, 1936. Johannesburg, 1937. 190 pp.

Includes a detailed description of annual-leave privileges of various classes of gold-mine employees; a statement submitted by the gold producers' committee concerning responsibility for the contracting of silicosis by workers; and statistics of number of persons employed in the gold mines in each year 1904-1936, and of fatal accidents 1905 to 1936.

Statistische übersicht über die kohlenwirtschaft im jahre 1936. Berlin, Reichskohlenrat, 1937. 142 pp., charts.

Coal statistics are given for each of the countries where coal mining is important. The data deal mainly with production although some information is included on wages and use of machinery.

Negro in Industry

Earnings and hours of Negro workers in independent tobacco stemmeries in 1933 and 1935. By Jacob Perlman. Washington, U. S. Bureau of Labor Statistics, 1937. 20 pp. (Serial No. R. 562, reprint from May 1937 Monthly Labor Review.)

Old-Age Pensions

Age without fear. By David Cushman Coyle. Washington, National Home Library Foundation, 1937. 123 pp.

Critical and analytical discussion of the social-security system in the United States. There is a brief bibliography.

Old age and the Social Security Act of 1935. By Thomas L. Norton. Buffalo, University of Buffalo, School of Business Administration, 1937. 116 pp.

Appraises the Federal Social Security Act for its points of weakness and strength and makes suggestions as to how it should be amended to improve its workability.

Characteristics of State plans for old-age assistance approved by the Federal Social Security Board as of April 1, 1937. Washington, U. S. Social Security Board, Bureau of Public Assistance, 1937. 17 pp. (Publication No. 16.)

Tabular presentation of principal provisions of State laws and plans for old-age assistance.

Report of the United States Railroad Retirement Board for the period ended June 30, 1936. Washington, 1937. 12 pp.

Report of Massachusetts Commission on City and Town Pensions. Boston, State Legislature, 1936. 89 pp. (House No. 1501.)

Report of a special commission to investigate the advisability of revising the provisions of general laws relating to a contributory retirement system for cities and towns.

Annual report of Vermont Old Age Assistance Department, for the fiscal year ended June 30, 1936. Burlington, [1936?]. 7 pp., chart.

Third annual report of the Old Age Pensions Board of Nova Scotia, for year ended November 30, 1936. Halifax, 1937. 8 pp.

Personnel Management

The fundamentals of industrial psychology. By Albert Walton. State College, Pa., Pennsylvania State College, Extension Services, 1936. 200 pp.

A series of treatises, numbered Book I to Book XVI, upon the practical application of the essential principles of psychology to methods used in industrial management.

Prices

Price discrimination and price cutting. (In *Law and Contemporary Problems*, Duke University, School of Law, Durham, N. C., June 1937, pp. 271-422.)

The articles brought together in this symposium review the history of governmental control of prices in this country, considering particularly the Robinson-Patman Act and its effect upon business.

Price movements and price policy in Germany. (Supplement to *Weekly Report of German Institute for Business Research*, Berlin, June 2, 1937; 4 pp.)

Prison Labor

Progress report of Prison Industries Reorganization Administration, May 15, 1937. Washington, 1937. 33 pp.; mimeographed.

Reviewed in this issue.

Relief Measures and Statistics

Chronology of the Federal Emergency Relief Administration, May 12, 1933, to December 31, 1935. By Doris Carothers. Washington, U. S. Works Progress Administration, Division of Social Research, 1937. 163 pp. (Research Monograph VI.)

Urban workers on relief: Part II, The occupational characteristics of workers on relief in 79 cities, May 1934. By Katherine D. Wood. Washington, U. S. Works Progress Administration, Division of Social Research, 1937. xx, 301 pp., charts. (Research Monograph IV.)

The extent and character of the relief problem in the 79 cities are discussed, and much detailed information as to the background and occupational history of the unemployed is presented.

Unemployment relief, 1935 to 1937: Final report of activities of the New Castle County, Delaware, Temporary Emergency Relief Commission, for the period March 1, 1935, to March 31, 1937. Wilmington, Del., 1937. 98 pp., charts; mimeographed.

Eighth biennial report of the Texas State Board of Control, for the biennium ended August 31, 1936. Austin, 1937. 117 pp.

Contains data on relief assistance, old-age pensions, and institutions under the board's supervision which care for the blind and aged.

Relief and health problems of a selected group of nonfamily men. By Glenn H. Johnson. Chicago, University of Chicago Press, 1937. 81 pp., illus. (Social Service Monograph.)

The study covered a small group of men who had been on relief, and dealt with the special problems of housing, physical and mental handicaps, and need for adequate medical care. The work records, education, and employability of the men were studied, and it was shown that there was no essential difference between the social problems of the "family case" and those of the "nonfamily" man.

Self-Help Activities

Annual report of Division of Self-Help Cooperative Service, California State Relief Administration, July 1, 1935–June 30, 1936. San Francisco, 86 Third Street, 1937. 45 pp., charts; mimeographed.

Reviewed in this issue.

Four years' experience with self-help or subsistence gardens in Monroe County, New York. Rochester, N. Y., Civic Committee on Unemployment, Self-Help Garden Project, 1936, various paging, illus.; supplementary report, 1937, 17 pp.; mimeographed.

Sickness Insurance

Statistika nemocenského pojištění za rok 1935. Prague, Ústřední Sociální Pojišťovna, 1936. 180 pp.

Annual report on sickness insurance in Czechoslovakia in 1935, with related legislation. Parts of the report are in French and German, the rest in Czech.

Social Security

Social security. By Maxwell S. Stewart. New York, W. W. Norton & Co., Inc., 1937. 320 pp.; bibliography.

The United States has lagged far behind other industrial nations in attempting to meet the problems of insecurity arising from our high state of industrial development. The book discusses the reasons for this delayed attack on the problems of unemployment, sickness, and care of widows, orphans, and the aged, as well as the magnitude of the problems to be dealt with in developing an adequate program. There is a discussion of European social-insurance systems, and of probable future developments in the field of social insurance in this country, particularly in health insurance.

Social security in the United States, 1937: A decade of social security. A record of the Tenth National Conference on Social Security, New York City, April 9 and 10, 1937, together with a census of social security in the United States. New York, American Association for Social Security, Inc., 22 East 17th Street, 1937. 214 pp.

Why social security? Washington, U. S. Social Security Board, [1937?]. 32 pp., illus. (Publication No. 15.)

A brief account of the development of measures for social security in the United States since the frontier days.

After five years—the unsolved problem of the transient unemployed, 1932–1937. New York, Committee on Care of Transient and Homeless, 1270 Sixth Avenue, 1937. 12 pp.

According to this report, the time has arrived when service to meet the transient's needs should be incorporated in a national relief and security program. "Mobility is a national economic necessity; it must cease to be a barrier to social security."

Characteristics of State plans for aid to dependent children approved by the Federal Social Security Board as of April 1, 1937. Washington, U. S. Social Security Board, Bureau of Public Assistance, 1937. 11 pp. (Publication No. 18.)

Tabular presentation of principal provisions of State plans and laws for assistance for dependent children.

Characteristics of State plans for aid to the blind approved by the Federal Social Security Board as of April 1, 1937. Washington, U. S. Social Security Board, Bureau of Public Assistance, 1937. 13 pp. (Publication No. 17.)

Tabular presentation of principal provisions of State plans and laws for care of the blind.

The first year of the social security program in the District of Columbia: Old-age assistance and aid to the needy blind. By Hazel I. Spicer. Washington, District of Columbia Board of Public Welfare, Public Assistance Division, 1937. 16 pp., charts; mimeographed.

Seventeenth annual report of New York State Board of Social Welfare, for year ended June 30, 1936. Albany, 1937. 240 pp. (Legislative Document, 1937, No. 22.)

Much information is given relative to the care of the aged through the medium of homes for old people and old-age pensions, and to the work done for the industrial training and placement of the blind.

Indberetning til Socialministeriet om arbejdsanvisningen og arbejdsløshedsforsikringen m. m. fra 1. April 1935-31. Marts 1936. Copenhagen, Arbejdsdirektøren, 1937. 102 pp., pasters.

Report of the Social Ministry on employment service and unemployment insurance in Denmark during the fiscal year 1935-36.

Kertomus vakuutusoloista suomessa vuonna 1935. Helsingfors, Sosiaaliministeriö, 1937. 186 pp.

This report on various forms of insurance, private and government, in Finland in 1935, includes a statement of operation of the industrial unemployment-insurance funds.

Printed in Finnish and Swedish, with table of contents and heads to main statistical tables also in French.

The annual report of the Bureau of Post Office Life Insurance, Japan, for the fiscal year 1935-36. Tokyo, Department of Communications, Bureau of Post Office Life Insurance, [1937?]. 250 pp., maps, charts. (In Japanese and English.)

Tennessee Valley Authority

A foreigner looks at the T. V. A. By Odette Keun. New York, Longmans, Green & Co., 1937. 89 pp., illus.

A vividly presented discussion of the agricultural, social, and economic conditions which made necessary the creation of the Tennessee Valley Authority, and of what that agency is doing in restoring the productivity of the Valley land and its residents. Includes a section on the labor policies of the Authority.

Textile Industry

The textile primer. By Harold O. Hatcher. (In Social Action, Council for Social Action, 287 Fourth Avenue, New York, April 15, 1936; 38 pp., charts, illus.)

Earnings and profits of the textile companies, capacity and production, total number of persons connected with the industry, employment, wages, and the life of the worker are discussed briefly and illustrated by charts.

Small-scale industries of Japan: The cotton industry. By Teijiro Uyeda and Tokijiro Minoguchi. Tokyo, Institute of Pacific Relations, Japanese Council, 1936. 101 pp., maps, charts. (IPR International Research Series; Japanese Council Papers, No. 4, Institute of Pacific Relations Conference, Yosemite, Calif., Aug. 15-29, 1936.)

The data on labor include number, sex, and age distribution of operatives; method of recruiting workers; average length of employment; the dormitory system for female workers; and wages.

Vacations With Pay

Vacations with pay under union agreements. Washington, U. S. Bureau of Labor Statistics, 1937. 3 pp. (Serial No. R. 583, reprint from June 1937 Monthly Labor Review.)

Arbeiterurlaub. By Karl Wenzel. Vienna, Kammer für Arbeiter und Angestellte, 1936. 46 pp.

Deals with workers' vacations, with and without pay, in Austria. The discussion covers pertinent legislation, conditions for granting vacations, length of vacation, dismissal during vacation, and other factors.

Wages and Hours

Annual earnings of employees in the iron and steel industry, 1934. By Edward K. Frazier. Washington, U. S. Bureau of Labor Statistics, 1937. 10 pp. (Serial No. R. 584, reprint from June 1937 Monthly Labor Review.)

Union scales of wages and hours in the printing trades, May 15, 1936. By Florence Peterson and C. F. Rauth. Washington, U. S. Bureau of Labor Statistics, 1937. 44 pp. (Bulletin No. 631.)

Earnings and hours of Negro workers in independent tobacco stemmeries in 1933 and 1935. By Jacob Perlman. Washington, U. S. Bureau of Labor Statistics, 1937. 20 pp. (Serial No. R. 562, reprint from May 1937 Monthly Labor Review.)

Oriental competition in world trade. By John E. Orchard. New York, Council on Foreign Relations, Inc., 1937. 15 pp. (Reprinted from Foreign Affairs, July 1937.)

The pamphlet contains discussion and a chart pertaining to Oriental wage levels and the increasing efficiency of Oriental labor.

Shorter workday—a plea in the public interest. Cleveland, Brotherhood of Railroad Trainmen, 1937. 55 pp.

Arguments for a shorter workday, based on technological changes, increased labor productivity, reduced labor cost per unit of output, and increased efficiency and safety to be expected from shorter hours.

Women in Industry

The position of women in contemporary France. By Frances I. Clark. London, P. S. King & Son, Ltd., 1937. 259 pp.

The section of the book devoted to the economic position of women discusses the changes in the occupations of wage-earning women and the rise of women in the professions.

The position of women in the U. S. S. R. By G. N. Serebrennikov. London, Victor Gollancz, Ltd., 1937. 288 pp.

Considers women as skilled workers and in professional and administrative positions, legislation for protection of woman workers, and the general position of women in the Soviet Union.

Women's Garment Industry

The depression and after in the women's garment industry. New York, International Ladies' Garment Workers' Union, Educational Department, 1937. 8 pp.

Reviews industrial and economic conditions in the women's garment industry immediately preceding the enactment of the National Industrial Recovery Act, the effect of that legislation on the industry, and the current effects of increased activity and higher prices in the trade.

Youth Problems

Activities of the American Youth Commission. Washington, American Council on Education, 744 Jackson Place, 1937. 14 pp.

A brief account of the organization of the Commission and of its first year's work, with discussion of the problems confronting American youth.

Administrative and program operation of the National Youth Administration, June 26, 1935–January 1, 1937. Washington, U. S. National Youth Administration, 1937. 33 pp.

The narrative section contains information on student aid, community organization, vocational guidance and placement, apprentice training, and educational camps for unemployed young women. In the statistical section are tables showing allocations and obligations for student-aid and work programs, by State, and employment and earnings on student-aid and work projects.

Youth—community surveys. By Carl A. Jessen and H. Clifton Hutchins. Washington, U. S. Office of Education, Committee on Youth Problems, 1936. 97 pp. (Bulletin, 1936, No. 18–VI.)

Reviews independent surveys that have been conducted by individual communities; the findings of surveys undertaken in 13 communities, in cooperation with the U. S. Office of Education, to obtain data on a comparable basis; and the technical aspects of youth surveys.

Youth-serving organizations—national non-governmental associations: An introductory survey and descriptive directory. By M. M. Chambers. A preliminary report to the American Youth Commission of the American Council on Education. Washington, American Council on Education, 1937. 327 pp.

Gives not only the title and the address of each organization, but also its membership, purpose, activities, publications, headquarters staff, and finances, when such data are available.

General Reports

Forty-fifth annual report of the Commissioner of Labor and Statistics of Maryland, 1936. Baltimore, 1937. 60 pp.

Surveys the year's activities of the various State labor agencies operating under the direction of the Commissioner, including the division of industrial inspection, the employment service, the children's division, the division of statistics, and the division of boiler inspection. Other features of the report are a review for 1936 of industrial disputes and of the coal-mining industry.

Twenty-third biennial report of West Virginia Department of Labor, [July 1, 1934, to June 30, 1936]. Charleston, [1936?]. 71 pp.

In addition to the review of the activities of the department, the report gives statistics of industrial accidents; children's work permits; and number of employees and average yearly wage, by industry.

Die amtsstätigkeit der Gewerbe-Inspektorate im jahre 1936. Vienna, Zentral-Gewerbe-Inspektorat, 1937. 178 pp., illus.

Annual report on factory inspection in Austria during 1936, with data on industrial accidents, occupational diseases, provisions for safety and hygiene in various industries and occupations, and general labor conditions.

Itégrálna dedina: Štúdiá slovenskej zemianskej dediny v turci. By Iva Šmakalová. Prague, Sociální Ústav, 1936. 111 pp., maps, illus.

Deals with customary occupations, social relations, and health conditions in rural communities in Czechoslovakia.

The condition of Britain. By G. D. H. and M. I. Cole. London, Victor Gollancz, Ltd., 1937. 471 pp.

Authentic secondary material is used in this compilation of factual data on social, industrial, and economic conditions in present-day Great Britain, dealing specifically with income, employment, unemployment, production, housing, educational and health facilities, standard of living, public social services, and working-class movements. As the authors express it, this survey of facts broadens into criticism, and closes with a suggested program of "what is to be done" to achieve what they contend should be the first objective of society—"the happiness and well-being of the greatest number of its citizens."

Thirty-sixth financial and economic annual of Japan, 1936. Tokyo, Department of Finance, [1937?]. 288 pp., map, charts. (In English.)

This general statistical yearbook includes statistics of employment in mines and factories in 1934, average daily wages of laborers and indexes of wages for 1934 and 1935, and information concerning post-office life insurance and annuities.

Annual report of the Newfoundland Commission of Government, for the year 1936. London, 1937. 60 pp. (Cmd. 5425.)

The subjects covered include old-age pensions, relief of able-bodied unemployed, cooperation, land settlement, and adult education.

New South Wales statistical register for 1934-35. Sydney, Bureau of Statistics and Economics, 1936. 696 pp.

A section dealing with social conditions contains data on housing, prices, and wages; and one on factories and mining gives statistics, by industry, of employment, wages, and days worked.

Statistical register of Western Australia for the year 1935-36 and previous years: Part VI, Industrial establishments (exclusive of mines), etc. Perth, Office of Government Statistician, 1937. 40 pp.

Statistics of number of establishments, average number of persons employed, and amounts paid in wages, are included in the report, and there is a detailed statement on minimum rates of wages, by industries and occupations, as of December 31, 1936.

History in the making: A summary of the legislative and administrative actions of New Zealand's first labor Government during its first year of office (Nov. 27, 1935, to Nov. 26, 1936). Compiled and arranged by David Wilson. Wellington, N. Z., Labor Bookroom (Late Clarte), 1937. 47 pp.

The seventeenth report of the Department of Labor, including the sixteenth report of the Minimum Wage Board, Province of Ontario, 1936. Toronto, 1937. 73 pp.

Covers employment conditions, employment service, factory inspection, and operations under the Apprenticeship, Industrial Standards, and Minimum Wage Acts.

Annual report of the Secretary of Labor, Philippine Islands, covering the period from November 15, 1935, to December 31, 1936. Manila, Department of Labor, 1937. 42 pp.

The report contains data on wages, settlement of wage claims, strikes and lock-outs, workmen's compensation, cost of living, and migration of labor.

Industri: Berättelse för år 1935. Stockholm, Kommerskollegium, 1937. 154 pp.

Annual report on industry in Sweden during 1935, showing number of workers by industry and by sex; total hours of employment furnished; and quantity, kind, and value of products.

Rural trends in depression years: A survey of village-centered agricultural communities, 1930-1936. By Edmund deS. Brunner and Irving Lorge. New York, Columbia University Press, 1937. 387 pp.

Chapters are devoted to changing agricultural backgrounds, population changes, business and industry, social organizations, adult education, and relief in rural areas.

